

Literacy in adults with developmental disabilities: Associations with psycholinguistic functions and the adaptive use of text

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We are examining literacy skills in adults with intellectual or communicative disabilities (ID/CD) who attend daily activity centers in Sweden. All participants are administered tests of literacy (word and nonword decoding, reading comprehension and narrative writing) and of psycholinguistic functioning (phonological memory, rapid naming, language comprehension and grapho-motor control). At present, data has been collected from approx. 30 adults with ID/CD. In addition, two comparison groups have been examined: 27 mainstream 7-11 year old children of comparable language level, and 15 adults without disabilities. The following research questions are posed: How well do adults with ID/CD read and write as compared to these two comparison groups? Are literacy skills similarly related to psycholinguistic functions in all study groups? Lastly, we examine how literacy skills as assessed with the tests relate to the individuals' adaptive use of text (e.g. their ability to read timetables or recipes) as rated by significant others. Data collection will be completed during the spring of 2013, and the results presented at the conference.

Betydelsen av läsflyt på läsförståelsen

Läsflyt är en dimension av läsning som fått relativt låg grad av uppmärksamhet trots att den påtalas som en viktig komponent för läsförståelse (National Reading Panel, 2000). Ett sätt att betrakta läsflyt är som tre delkomponenter: 1) precision som avser förmågan att korrekt kunna avkoda ord, 2) hastighet som vanligen mäts i antal ord/minut samt 3) prosodi som avser intonation, betoning och rytm. I många studier mäter man läsflyt enbart genom att fastställa hastighet (Landerl & Wimmer, 2008), medan andra (ex. Torgesen och Hudson, 2006) menar att prosodins roll är en av de mest intressanta aspekterna vad gäller forskning om läsflyt, då prosodisk läsning i sig kan utgöra ett stöd för läsförståelse. Trots detta är ytterst få studier genomförda med verkliga försök att mäta prosodi. Syftet med föreliggande studie är dels att hitta en metod för att bedöma prosodi utifrån ovan nämnda kriterier, och dels att relatera betydelsen av de tre aspekterna av läsflyt till elevernas läsförståelse och vokabulär. I studien deltog elever från årskurserna 4 och 5, varav en grupp elever med läs- och skrivsvårigheter (n=112) och en grupp utan kända läs- och skrivsvårigheter (n=78). Eleverna genomförde vokabulär-, läsförståelse- och läshastighetstester. Korrekta svarsalternativ, hastighet och precision noterades. Ljudupptagningar av elevernas högläsning kategoriserades sedan av oberoende bedömare. Preliminära resultat tyder på ett samband mellan prosodi och läsförståelse, medan sambandet mellan hastighet och läsförståelse är lägre. Betydelsen av de olika komponenterna för elever med och utan läs- och skrivsvårigheter kommer att diskuteras.

Einsatz der stakkatierenden Lesemethode in die Legasthenietherapie.

Der bekannte Didaktiker Hans Aebli sagte zurecht: "Beruflicher Erfolg und berufliches Fortkommen erfordern die Fähigkeit, mit [...] Texten umzugehen. Wer es kann, kommt mit. Wer darin versagt, bleibt sitzen oder geht unter."¹

Daraus folgt, dass legasthene Kinder, die Probleme mit dem Lesen aufweisen, am schlimmsten betroffen sind, denn eine Lesestörung wirkt sich nicht nur im Fach Deutsch aus, sie überschattet alle Lernfächer, verbaut die gesamte schulische Laufbahn und verhindert nicht selten den Betroffenen eine angemessene Berufsausbildung zu erhalten. Eine möglichst wirksame pädagogische Therapie ist in diesen Fällen deshalb von einer besonderen Relevanz.

Das Lesetraining erfolgt in unseren Praxen seit 13 Jahren nach der von der Verfasserin entwickelten „stakkatierenden Lesemethode“ die sich im Wesentlichen auf den syllabierenden Ansatz nach Ch. Röber-Siekmeier stützt. Das therapeutische Know-how der stakkatierenden Lesemethode besteht in dem synchronen rhythmischen Silbenklopfen und lautem Silbenlesen, zuerst mit dem Zeigefinger und später mit einem entsprechenden Finger für jede Silbe, die von einander durch einen Querstrich getrennt sind. Dadurch kann das gleichzeitige Stimulieren des feinmotorischen Gehirnzentrums, des motorischen und sensorischen Sprachzentren erfolgen, was zur stärkeren Vernetzung aller dieser für das Lesen relevanten Gehirnregionen beiträgt. Mehrere wissenschaftliche Untersuchungen konnten beweisen, dass Motorik, vor allem die Feinmotorik, eng mit der Sprachentwicklung zusammenhängen. Der Grund dafür liegt offensichtlich daran, dass die Verarbeitungszentren von Fein- sowie Mundmotorik und Sprache im Gehirn dicht nebeneinander liegen und stark vernetzt sind. Dies zeigt deutlich den evolutionären Zusammenhang zwischen Feinmotorik und Sprache. Es ist bekannt, dass feinmotorisch beeinträchtigte Kinder auch Probleme bei der Sprachentwicklung sowie beim Lesenlernen zeigen.

Außerdem kann man davon ausgehen, dass durch das synchrone Klopfen und Sprechen wahrnehmungs- und sprachbasierte visuomotorische sowie die auditiv-artikulatorische Störungen gleichzeitig mitbehandelt werden.² Durch Einsatz dieser Methode für die Therapie der Lesestörung konnten laut Aussagen der Eltern und Lehrer und anhand der eigenen Beobachtungen³ bei 85% der Kinder mit Lesestörungen signifikante Verbesserungen des Lesens festgestellt werden.⁴

Die stakkatierende Lesemethode darf als ein neurodidaktischer⁵ Ansatz im Leseerwerb gesehen werden. Die grundlegenden Ideen der Lesemethode sind aus der Verbindung von Sprachwissenschaften und moderner Hirnforschung hervorgegangen.

Dr. Nina Hellwig

Erlangen, 2013

1 Aebli, 1983, S.115

2 Das bei legasthenen Kindern oft Probleme in den auditiven sowie visuellen Bereichen vorhanden sind beweist z. B. Fischer (2011) in seinen Untersuchungen. Vgl. zu dem Thema auch S. Dehaene 2009, B. Fischer 2007 u.a.

3 Die Verfasserin verfügt über längsschnittliche Therapieerfahrungen (in der Regel 2 bis 2,5 Jahre Therapie pro Kind, das entspricht ca. 100 Behandlungsstunden) mit legasthenen Kindern

4 Durch die Studie der psychologischen Fakultät der Univ. Bamberg, wiss. Leitung Prof. J. Rüsseler konnten u.a. die langfristigen Erfolge dieser therapeutischen Lesemethode nachgewiesen werden.

5 Der Begriff Neurodidaktik geht auf Prof. Dr. Preuß (1988) zurück

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Promoting the part-whole concept of primary school students with dyscalculia through word problems using elementary algebra instead of concrete numbers

Abstract

Mathematics is more than calculating. Therefore we think it reasonable to show students with dyscalculia what they can achieve in mathematics class despite their dyscalculia. A predictor of good performance in mathematics in grade 11 is solving word problems effectively in grade 2 (Stern 2003, p. 210). Mathematic skills that support the solving of word problems are thus necessary for being successful in future mathematics classes. In order to deal with word problems effectively, students do not primarily have to be able to calculate well. In fact it is more important to recognize the mathematic structure of the word problem and the operation to follow. The necessary calculation is a mere formality carried out in higher classes with the calculator anyway.

An approach to fostering students' abilities starts right here. According to this method of Davydov (1975), students work with "algebra-orientated" word problems, like "Lisa owns x marbles. She gets y marbles from Tom. Now she owns z marbles." Thereby their focus will be attracted away from numbers, enabling us to develop the structure of the situation together with the students. As an effective tool the students will learn the creation and use of line diagrams which in turn help them derive the equation themselves.

Thus the students will not only get an elementary insight in the structure of the word problems, but also deepen their understanding of operations. Additionally, they will gain a sound basis for later algebra.

Our talk is aimed at teachers and special educators. We will describe our approach in detail and illustrate it with video recordings.

Literatur

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Stern, E. (2003). Lernen ist der mächtigste Mechanismus der kognitiven Entwicklung: Der Erwerb mathematischer Kompetenzen. In W. Schneider & M. Knopf (Hrsg.), *Entwicklung, Lehren und Lernen: Zum Gedenken an Franz Emanuel Weinert* pp. 207–217). Göttingen: Hogrefe.

**Eva Adler und Maria Götzinger-Hiebner:
Der neue Lesetest LT Plus Plus 5-9**

Mit dem LT Plus Plus 5-9 liegt ein Lesetest für die Einzeltestung von der 5. bis 9. Schulstufe vor. Ziel des LT Plus Plus ist es, ein differenziertes Förderprofil als Grundlage für ein gezieltes Lesetraining zu liefern. Er überprüft drei verschiedene Aspekte des Lesens: 1. den Lesefluss anhand von Einzelwörtern, die den Kategorien „wortähnliche“ und „wortunähnliche Pseudowörter“ entsprechen, 2. die Fähigkeit, Handlungsanweisungen zu verstehen und umzusetzen an verschiedenen Aufträgen sowie 3. das Sinnverständnis an drei erzählenden Texten, die selbstständig gelesen und mündlich wiedergegeben werden. Durch die Verwendung von Ganztexten wird die Fähigkeit, satzübergreifende Strukturen zu erfassen, überprüft. Zusätzlich wird zwischen dem Behalten inhaltlich relevanter Inhalte und dem Merken von weniger bedeutsamen Details differenziert. Um die Messung der Lesefähigkeit von der des Wortschatzes zu entkoppeln, wurde auf möglichst einfache Wortwahl geachtet. Die Lesezeit wird durch das Testdesign zwar erfasst und in die Bewertung einbezogen, Lesegenauigkeit und Sinnverständnis können aber unabhängig von der Zeit ermittelt werden. Es hat sich gezeigt, dass einerseits allgemein die Korrelation zwischen geringer Lesezeit und guter Sinnerfassung zwischen den einzelnen Texten variiert und dass sich andererseits die Qualität der Sinnerfassung individuell von Text zu Text deutlich unterscheidet, was die Verwendung mehrerer Texte zur Überprüfung des Leseverständnisses als geboten erscheinen lässt.

Abstract till en paperpresentation EDA 2013, Växjö 20-22 september 2013

Ingela Andreasson, Ulrika Wolff och Malena Åvall, Göteborgs universitet, Institutionen för pedagogik och specialpedagogik.

Textanalys av åtgärdsprogram för elever med läs- och skrivsvårigheter

Förändrade och institutionaliserade bedömningspraktiker växer fram inom utbildningsväsendet i Sverige, och trenden har blivit att allt fler dokument ska skrivas för att bedöma, följa upp och utvärdera en elevs lärande och utveckling. Ett ökande antal barn i Sverige har någon form av skolsvårigheter och en majoritet av dessa har läsproblem. Ett flertal studier visar att dessa dokument får betydelse för hur olika läsare såsom lärare och annan skolpersonal, föräldrar och inte minst eleven själv, uppfattar skolsvårigheterna men också att det påverkar elevers självbild (se exempelvis Skolverket, 2003, Isaksson, Lindqvist & Bergström 2007; Asp Onsjö, 2006, Andreasson, 2007, Vallberg Roth, 2011). Den aktuella studien är en del av ett större projekt och syftar till att belysa hur elever med läs- och skrivsvårigheter skrivs fram i åtgärdsprogram med avseende på kön och stödåtgärder. Åtgärdsprogrammen (N=180) som utgör det empiriska materialet i studien är insamlat från 61 lärare i 11 kommuner i Sverige. Preliminära analyser visar att det finns könsskillnader mellan hur pojkar och flickor blir beskrivna i dokumenten och vilka stödåtgärder som föreslås i åtgärdsprogrammen. Bedömningen av elevernas svårigheter tenderar ske utifrån två olika normsystem, ett för flickor och ett för pojkar.

Title: An innovative tool for assessing dyslexia and predicting treatment outcome

Authors: Sebastián Aravena and Jurgen Tijms

Department of Developmental Psychology, University of Amsterdam, Amsterdam , The Netherlands

IWAL Institute, Amsterdam, The Netherlands

Our research consists of two related studies. In the first study dyslexic (N=46) and non-dyslexic (N=45) readers engaged in a short training (20 minutes) aimed at learning eight basic letter-speech sound correspondences within an artificial orthography. After the training we assessed both letter-speech sound matching (accuracy and speed) and word reading ability in this unfamiliar script. The findings indicated that after the training the non-dyslexic readers significantly outperformed the dyslexic readers on all three measures, providing empirical support for an artificial orthography letter-speech sound mapping training as a dynamic tool for differentiating dyslexic readers from non-dyslexic readers. In the second part the same dyslexic readers (N=46) engage in a traditional dyslexia treatment program during nine months. The aim of this study is to measure the extent to which the outcome of the artificial orthography training may predict the success of the dyslexia treatment program. The final results from both studies will be presented and both theoretical and clinical implications will be discussed.

Abstract submission - 4th All-European Dyslexia conference

Title: Serial order working memory is impaired in developmental dyscalculia.

Authors

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Abstract

Several studies explored associations between impairments in verbal working memory (WM) and numerical cognition, but with inconclusive findings. The present study explored verbal WM impairment in children with developmental dyscalculia, by adopting the critical distinction between WM for item information (the items to be retained) and WM for order information (the order of the items within a list). We hypothesized that especially WM for order should be related to impaired numerical abilities, given that recent studies suggest close interactions between the representation of order information in WM and ordinal numerical processing. We investigated item and order WM capacities as well as basic numerical processing abilities in 16 children with dyscalculia (age: 8-11 years) and 16 typically developing children matched on age, IQ and reading abilities. WM for order information was assessed via a serial order reconstruction task which maximized serial order storage requirements. WM for item information was assessed using a single monosyllabic nonword delayed repetition maximizing phonological item processing. We observed that the group with dyscalculia performed significantly slower than the control group in symbolic order and magnitude judgment task, while not being slowed on general measures of processing speed. Dyscalculic participants also performed significantly poorer and with less precision than controls in the order WM task, but not in the item WM task. These results highlight a specific impairment for WM for serial order in dyscalculia, and could reflect a more general serial order processing impairment for both WM and numerical domains.

244 words

Format: Poster presentation

The proposal is mainly from an academic perspective.

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WHO IS THE STUDENT IN NEED OF SPECIAL EDUCATION IN MATHEMATICS?

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Abstract

Students in need of Special Education in Mathematics (SEM-students) are discussed in various fields within the Education system. This study aims at identifying definitions of the SEM-student used in research connected to a special pedagogical perspective and analyse how these definitions relate to practice. This is performed by making a review of scientific articles within the area of special education and an analyse of data consisting of video assisted interviews with special education teachers, teachers, principals and pupils. Questions are directed from the overall research question of this paper: “who is the SEM-student?” The approach in the paper draws on Magne (2003) proposal that research should take on a more relativistic view on special educational needs in mathematics. This is made with an understanding of the identity of the SEM-student as fluent and not stable (Silfver, Sjöberg & Bagger, forthcoming). Preliminary findings suggest there might be special needs in mathematics that are not detected nor supported using the present definitions. Some students are because of the current interpretations of the SUM-student foreseen both in research and practice.

Magne, O. (2003) Literature on Special Educational Needs in Mathematics. *A bibliography with some comments.*

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Silfver, E. Sjöberg, G. Bagger, A. (Fortcoming) *Changing our methods and disrupting the power dynamics: National tests in third-grade classrooms.* International Journal of Qualitative Methods.

Title: Bridging Inferences among Adequate and Struggling Adolescent Comprehenders and Relations to Reading Comprehension

Authors: Amy E. Barth, Mary York, Jack Fletcher, Carolyn Denton, Sharon Vaughn, David Francis, and Marcia Barnes

Presentation type: Oral Presentation; Academic

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Abstract:

Purpose: The purpose of this study was to examine the effect of textual distance (near or far) and concept consistency (consistent or inconsistent) on the rate and accuracy of bridging inferences among secondary students and to determine whether the effects varied by reader group (struggling or adequate) and grade (grade level). We were also interested in determining whether bridging inference ability uniquely accounted for variance in measures of reading comprehension.

Method: Separate 2 (reader subgroup) by 7 (grade) by 2 (textual distance), by 2 (concept consistency), mixed model analyses of variance (ANOVA) were conducted on the accuracy and rate of bridging inferences. Multiple regression was used to determine whether bridging inferences ability uniquely accounted for variance in reading comprehension.

Results: Results indicated that when the information-to-be-integrated was close in proximity, adequate comprehenders more rapidly and accurately judged inconsistent concepts as not

aligning with the mental model of text than consistent concepts as aligning with the mental model. Struggling comprehenders did not differ significantly in their ability to accurately judge consistent or inconsistent concepts as aligning or not aligning with the mental model of text. Developmental improvements in bridging inference ability were not consistently observed from one grade to the next, but differences were present between middle school and high school. Finally, bridging inference ability uniquely accounted for 2-8% of the variance in reading comprehension.

Title: Morphological processing and reading: the case of dyslexic students

Author: Rachel Berthiaume

Proposal primarily underlined by an academic view.

Abstract: Dyslexic children encounter great difficulty in learning to read (INSERM, 2007). If phonological processing is mainly pointed out as the source of their reading deficit (Demont & Botzung, 2003; Ramus, 2003; Snowling, 2006), there are no apparent reasons to believe that these children would have difficulties in processing the morphological structure of words. Indeed, morphological units are visually accessible units, as opposed to units of sound. The objectives of this study are to investigate dyslexic students' knowledge of morphology in written French and verify whether this knowledge is related to their performance in reading. Dyslexic subjects (n=50) aged 9 to 12 were matched to subjects of the same chronological age (CA) and subjects of the same reading age (RA). We used a lexical probability task (LPT) where subjects had to determine which of two pseudowords resembled the most to a real word in written French, a derivation task (DT) implying the production of complex word forms and a segmentation task (ST) where subjects had to segment words into morphemes. For all groups, results are above the threshold of chance for the LPT and the DT only. Results from ANOVAs indicate that all groups have better scores on DT than LPT and on LPT than ST. Finally, dyslexic subjects and CL have comparable results, but perform more poorly than CA. These results constitute the basis for further research on the role of morphological structure in dyslexic children's reading development and may lead to more adapted literacy teaching practices.

Predicting dyslexia using pre-reading skills: The role of sensorimotor and cognitive abilities

Julia M. Carroll, Laura R. Shapiro, Jonathan Solity

It is well established that phonological processing is a key cause of reading difficulties. However, much of the evidence comes from group difference studies, which may mask possible individual differences in deficits. When White et al., (2006) examined incidence of individual deficits in dyslexic children, they found that only half of them showed phonological awareness deficits. Pennington et al., (2011) argues that dyslexia is caused by a combination of multiple deficits, with dyslexic children showing two or more of a range of possible deficits.

In order to examine this hypothesis in a larger, representative sample of poor readers, we tested 455 children at school entry on a wide range of measures associated with dyslexia, including phonological awareness, visual search, auditory processing, rapid naming, short term memory, motor planning and vocabulary. Children were retested one, two and three years later and poor readers compared to the rest of the sample. Poor readers were more likely to have deficits in all areas except motor planning and postural stability, and all but two of the poor readers showed deficits in at least one area, but there were no areas of deficit shared by the majority of poor readers. Print awareness and auditory difficulties were the most common deficits shown. The results fit with Pennington et al.'s multiple deficits view.

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4th All-European Dyslexia Conference

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3. FORMAT DE PRÉSENTATION : Communication orale, éléments théorique et pratique / oral presentation, theory and practice.

4. TITRE : Développement des représentations orthographiques d'élèves présentant une dyslexie-dysorthographe : interventions rééducatives traitant de la morphologie / Remedial interventions on the orthographical representations of pupils presenting a dyslexia-dysorthographia

5. LANGAGE DE LA CONFÉRENCE: Français / Language of the conference : French

6. RÉSUMÉ EN FRANÇAIS, *English summary will follow*

Développement des représentations orthographiques d'élèves présentant une dyslexie-dysorthographe : interventions rééducatives traitant de la morphologie

L'apprentissage de la lecture-écriture est une activité complexe. Un environnement stimulant ainsi que des interventions pédagogiques différenciées facilitent le développement des compétences de l'apprenti. Toutefois, pour l'élève présentant une dyslexie-dysorthographe, certains déficits entraînent des difficultés à produire et à orthographier adéquatement les mots isolés ce qui influence la réalisation de leurs productions écrites. Afin de permettre à ces élèves de vivre des succès, des interventions rééducatives distinctes sont nécessaires. Dans le cadre de cette communication, un programme d'interventions rééducatives centré sur la structure morphologique des mots écrits auprès d'élèves âgés de 10 ans à 12 ans, présentant une dyslexie-dysorthographe, sera présenté. Ce programme, d'une durée de 20 semaines, est constitué d'interventions orthodidactiques favorisant entre autres, une intervention directe, des exercices cumulatifs, une rétroaction immédiate et la révision des notions. Chaque séance rééducative, d'une durée d'environ une heure, se réalise selon une même structure. Des activités à l'oral et à l'écrit sont effectuées afin de consolider les notions travaillées. Par ailleurs, lors de la réalisation du projet de recherche, afin de suivre systématiquement l'évolution des représentations orthographiques des élèves, un protocole individuel avec sujets multiples a été privilégié. Les mesures continues sont effectuées par l'intermédiaire de productions de mots plurimorphémiques entraînés et non entraînés. Par conséquent, cet exposé permettra de démontrer les apprentissages réalisés par les élèves par l'intermédiaire de résultats quantitatifs et qualitatifs.

RÉSUMÉ EN ANGLAIS

Development of the orthographical representations for pupils presenting a dyslexia-dysorthographia: remedial interventions dealing with morphology

The "read-write" training is a complex activity. A stimulating environment as well as differentiated teaching interventions facilitates the development of competences of the apprentice. However, for the pupil with dyslexia-dysorthographia problems, certain deficits involve difficulties for the production and adequate spelling of isolated words that influences the realization of their written productions. In order to make it possible for these pupils to live successes, distinct remedial interventions are necessary. Within the framework of this communication, a program of remedial interventions focussed on the morphological structure of written words addressed to 10 to 12 years old pupils, with a dyslexia-dysorthographia problem, will be presented. This 20 weeks duration program consists of orthodidactic interventions supporting inter alia, a direct intervention, cumulative exercises, an immediate feedback and the revision of the concepts. Each remedial session, lasts approximately one hour and is carried out according to the same structure. Oral and written activities are carried out in order to consolidate the concepts learned. Furthermore, at the time of the realization of the research project, in order to systematically follow the evolution of the orthographical representations of the pupils, an individual protocol with multiple subjects was privileged. The continuous measurements are taken by the intermediary of plurimorphemic productions of trained and untrained words. Consequently, this communication will make it possible to show the achievements carried out by the pupils via quantitative and qualitative results.

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2) Title

Is phonology really the main witness? The case of dyslexics' spelling deficit.

3) Abstract

Purpose

For dyslexic children, learning to read and write constitutes a great challenge (Snowling, 2006). A consensual explanation for these learners' delay relates to their phonological deficit (Ramus *et al.*, 2003; Sprenger-Charolles & Colé, 2003). Results from studies designed to describe dyslexics' spelling errors are not always as clear as those in reading concerning the role of phonological processes (Cassar *et al.*, 2005; Friend & Olson, 2008). In irregular languages like French, the use of the orthographic code involves not only phonological knowledge, but also morphological, visuo-orthographic and lexical knowledge. The main goal of this study is to describe the relative contribution of those types of knowledge in dyslexics' spelling ability.

Method

In total, 32 francophone dyslexic children aged 11.5 were compared to 24 reading-age matched controls (RA) and to 25 chronological-age matched controls (CA). All had to write a text that was analysed at the graphemic level. In total, more than 55 000 graphemes were analysed. All errors were classified as either phonological, morphological, visuo-orthographic or lexical errors.

Results

Results indicate that dyslexic children's spelling ability falls behind not only that of the CA, but also of the RA. In all groups, a large majority of errors is phonologically plausible. Also, for all groups, morphological and visuo-orthographic errors are the most frequent.

Conclusions

If most morphological errors relate to grammatical knowledge/processes, visuo-orthographic errors speak about the mental representations of the written words. The importance of visuo-orthographic knowledge/processes will be discussed as a complementary explanation of dyslexics' delay in writing.

Effective support and coaching of young adults with dyslexia: Results of a qualitative and quantitative study.

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Young adults with dyslexia struggle with specific problems in their studies. They therefore need specific types of support. Only few studies focus on this target group and little attention has been paid to the broader context. The present study aimed to get an overview of the effective and ineffective aspects of support. The ultimate goal of this research is the development of an evidence-based support program.

The first study focused on the *experiences* of young adults with dyslexia and their network. To this aim, young adults with dyslexia, their parents, tutors and therapists took part in a semi-structured interview about the impact of dyslexia, effective and ineffective aspects of therapy and support, and experienced needs.

In a second study, we aimed to *quantify* these findings: what works for most young adults? A questionnaire was administered to 102 young adults with dyslexia (higher education).

The results revealed quite some effective (e.g. access to a contact person at school, tutoring) and ineffective (e.g. lack of communication, no evaluation of accommodations) aspects of support. The results also showed that, although the 'core' difficulties match those observed in the literature, other difficulties (e.g. reading comprehension) turned out to be more prominent in the experiences of the young adults. We discuss the results of both studies and the implementation in a support program for young adults with dyslexia. The program starts from the perceived needs of the young adult and integrates psycho-education with the implementation of compensatory strategies and tools into the individual study method.

ABSTRACT

Proposal for 2013 Meeting, European Dyslexia Association

Characteristics of a Research-Validated Early Intervention for Children At-Risk for Serious Reading Difficulties and Disabilities

Responsive Reading Instruction (RRI; Denton & Hocker, 2006) is an early reading intervention for children at-risk for serious reading difficulties or disabilities (RD). RRI has demonstrated efficacy and effectiveness in three randomized field studies conducted in the United States. In the first two (Denton et al., 2010; Mathes et al., 2005) RRI demonstrated significantly better effects on multiple reading measures than typical school reading instruction for children at-risk for RD in Grade 1. In the third study, Denton et al. (in press) evaluated RRI as a Tier 3 intervention in a multi-tiered intervention system, contrasting its effects with those of typical instruction for children in Grade 2 who had previously demonstrated inadequate response to a supplemental early reading intervention in Grade 1. Children who received RRI performed significantly better on measures of word reading and comprehension, but not in fluency. In each study, RRI was implemented in groups of 3-4 children with one well-trained teacher, for 40 min. daily, over 20 to 30 weeks. Key characteristics of RRI include: (a) 10 min. of daily explicit phonics and word identification instruction, (b) a large amount of daily oral reading practice in which strategies and skills are applied with feedback and scaffolding from the teacher, (c) integrated instruction in fluency and comprehension, (d) reading non-decodable text at the instructional reading level, and (e) individualized instruction within a framework of allowable teaching activities. This session will provide a brief overview of the research evidence for RRI and describe the intervention in detail.

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Interventionsstudie i syfte att främja läsutvecklingen hos barn

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En utmaning för både forskare och praktiserande lärare är att utveckla, sprida och implementera metoder för att hjälpa alla elever att förvärva en god läsförmåga. För elever som har det svårt med sin läsning blir det extra viktigt. Ett sätt att göra detta är att genomföra interventionsstudier.

Presentationen kommer att innehålla metod och resultat från en interventionsstudie genomförd med elever i årsskurs 2. Totalt deltog 130 elever i studien. Eleverna använde två olika datorbaserade träningsprogram. Det ena programmet är fonologiskt inriktat och det andra är mer ortografiskt och inriktat på läsförståelseträning. Eleverna delades in i olika grupper och använde antingen det fonologisk inriktade programmet eller det mer ortografiskt inriktade eller en kombination av båda dessa.

Under presentationen kommer kvantitativa resultat från olika lästester som genomförts med eleverna både före och efter interventionen att redovisas. Vidare kommer också kvalitativa tolkningsaspekter av interventioner som metod för att främja läsutvecklingen att presenteras.

ABSTRACT: Drama, Performance Ethnography and Self-Esteem Listening to Youngsters and their Parents (TOTAL 247 words)

Dyslexia, or rather how students with dyslexia are understood and supported, does not only affect literacy and school learning, but also emotional well-being, self-worth and quality of life of persons with dyslexia. In some cases low self-esteem can be so severe that suicide or revenge is seen as the last and only option (Batshaw, 1997; National Joint Committee on Learning Disabilities, 1990; Riley & Rustique-Forrester, 2002)). Riley and Rustique-Forrester (2002) note that students with dyslexia find school a profoundly sad and depressing experience: "isolated children and shouting teachers. A recurring image is of school as a prison from which children continually try to escape...small voices crying for help, caught in a cycle of circumstances they felt largely unable to influence" (p.33). This, however, can be changed with a more respectful inclusive curriculum and pedagogy, and the use of Drama (Eaden, 2004) and performance ethnography (Brewer, 2000; Speedy, 2008). A series of workshops were carried out with a group of adolescent youngsters. The aim was to provide a safe environment where young participants with dyslexia can find their voice and gain confidence in their abilities, talents and challenges (Burden & Burdett, 2005); to provide the opportunity for participants to, through drama and performance ethnography, improve and/or gain self-esteem; and to provide themselves and us with greater insight into possibilities and challenges (Burden & Burdett, 2007; Eaden, 2004). This paper intends to present the youngsters' and parents' views of this experience. Results indicate empowerment and positive effects on self-esteem.

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According to Freedom to Learn (2000) there are an estimated 10% of pupils with dyslexia in schools many of whom are supported by Teaching Assistants (Blatchford *et al* 2003; Thornton *et al* 2006; Woods *et al* 2009). This study investigated Teaching Assistants' (TAs) knowledge and understanding of dyslexia in primary and secondary schools in two LAs in North West England. Additionally it explored the TA's dyslexia training needs and the training opportunities available to them

This study adopted a predominantly qualitative approach supplemented by quantitative data. Data collection involved:

- A mapping exercise involved survey questionnaires completed by 267 TAs resulting in a return rate of 53.4%.
- A representative subsample of 10 TAs who participated in face-to-face semi-structured interviews.
- Pre and post-intervention focus group discussions involving 27 TAs to ascertain the impact of a dyslexia training session.

Dyslexia is a specific learning difficulty about which there is no definite agreement as to its definition or existence (Elliott 2005; Burkard 2005; Stanovich *et al* 1994; Shaw 2009) and manifests itself in multiple, individual learner profiles.

The research findings indicated that 88% of TAs participating in this study had little or no understanding of dyslexia. Common misconceptions were learning difficulties in reading, writing, spelling and reversal of letters. 96% of TAs expressed a need for training in dyslexia. The study also revealed that TAs' ambiguous status within the schools workforce (Lowe *et al* 2009; Woods *et al* 2009) prevents many from gaining access to relevant training.

Abstract : In English, EDA 2013

Anna Fouganthine, Christer Jacobson,

READD, Reading Development and Disability in Kronoberg.

The research project Reading Development in Kronoberg started 1989 in the county of Kronoberg in Sweden. Within the project framework, the decoding ability of all pupils in Year 2, born in 1980 in the county (2,166 pupils), was studied. Among these, some hundred pupils with reading difficulties were identified, of whom 103 were selected for inclusion in the project. They were matched against a control group of 90 pupils. Both groups were subsequently followed throughout the compulsory school. Some of them were also studied during their last term in the upper secondary school. The Kronoberg project has recently been supplemented by data from adulthood (age 29) in the form of questionnaires, test results and interviews. The presentation will demonstrate a database with data collected in this longitudinal research. The database shows for example much data on different reading performance tests, cognitive data, family background information, eye movements and school interventions. The database is of interest for continuing research.

Elisabeth Frank, Katarina Herrlin
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Lärarstudenters språkliga medvetenhet

Syftet med studien är att med fokus på lärarstudenter som utbildas till lärare i förskoleklass och årskurs 1-3 undersöka:

- studenternas egna språkliga medvetenhet och förhållandet mellan deras faktiska och upplevda kunskap
- hur studenternas språkliga medvetenhet förändras efter att under tio veckor deltagit i kursen Grundläggande språk- läs- och skrivutveckling

Metod

65 lärarstudenter ingår i studien. Före den aktuella kursen har studenterna under fem veckor läst barns språkutveckling. Där ingick, via föreläsningar och litteratur, momentet språklig medvetenhet. Vid kursstart i den efterföljande kursen genomfördes ett pretest där studenterna fick visa prov på den egna språkliga medvetenheten. I den aktuella kursen har studenterna mer handgripligt fått tillämpa de teoretiska kunskaperna gällande språklig medvetenhet. Vid slutet av samma kurs upprepades testet.

Resultat

I pretestet misslyckades många studenter med att svara på frågor om stavelser, fonem och vokalers ljudkvalitet. Posttestet visar att studenternas språkliga medvetenhet har ökat men att problemen kvarstår. Långt ifrån alla studenter har den förtrogenhet som behövs för att stötta eleverna i deras begynnande språk-, läs-och skrivutveckling. Såväl pre- som posttest visar också att studenterna i hög grad är omedvetna om vad de kan eller inte kan.

Bilateral auditory cortex activation differs between children at risk for dyslexia and control children before formal reading acquisition

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Acquiring reading skills is a complex task for a child. Several causes for difficulties in learning to read have been suggested such as problems in phonological awareness, verbal short-term memory, rapid naming, automatization, visual processing and auditory processing. This study focuses on examining auditory processing in children with and without risk for dyslexia before school age. Twenty six control children and 11 children at a familial risk for dyslexia were tested using EEG at the age of 5.5 years. A passive auditory oddball paradigm was used with deviating sound features in tone frequency, intensity and duration. All children showed the expected P1-N250 response complex to the standard tones. Control children showed robust mismatch negativity (MMN) responses to all three deviations and late discriminative negativity (LDN) responses to frequency change. At-risk children showed more negative response at a time window encompassing late P1 and early N250 compared to controls. This difference was localized to the auditory cortex at both hemispheres using both discrete and distributed source analyses. Additionally, control children and at-risk children showed a different topography for the LDN response to the frequency change. At-risk children had more posterior positive amplitude whereas control children had more anterior and temporal positive voltages. No group differences were found for the fronto-central negative voltages. The results suggest that children at risk for dyslexia have atypical auditory cortex functioning a year before formal reading instruction begins. Auditory problems could thus be one of the risk factors that lead to difficulties in learning to read.

Original

Acquiring reading skills is a complex task for a child. Thus it is likely that there is more than one cause for difficulties in learning to read. Several causes have been suggested such as problems in phonological awareness, verbal short-term memory, rapid naming, automatization, visual processing and auditory processing. This study focuses on examining auditory processing in children with and without risk for dyslexia before school age. Twenty six control children and 11 children at a familial risk for dyslexia were tested using EEG at the age of 5.5 years. A passive auditory oddball paradigm was used with deviating sound features in tone frequency, intensity and duration. All children showed the expected P1-N250 response complex to the standard tones. Control children showed robust mismatch negativity (MMN) responses to all three deviations and late discriminative negativity (LDN) responses to frequency change. When comparing the groups a time window encompassing late P1 and early N250 showed shift toward negative voltages in children at risk for dyslexia than in controls. This difference was localized to left and right auditory cortices using both discrete and distributed source analyses. Additionally, the control children and at-risk children showed different topography for the LDN response to the frequency change. Children at risk for dyslexia had more posterior positive voltages whereas control children had more anterior and temporal positive voltages whereas there were no differences in the fronto-central negative voltages. The results suggest that children at-risk for dyslexia have atypical auditory cortex functioning a year before formal reading instruction begins. Auditory problems could be one of the risk factors that eventually lead to difficulties in learning to read.

Talande textremsa på bio och TV

Spoken subtitles in cinema theaters and TV

Inför seminariet kan åhöraren ladda ner en applikation till smartphones. Applikation tillåter lyssning till översättning av detta seminarium, samt av Torbjörn Lundgrens seminarium. Vi återkommer med mer information om hur man laddar ner applikationen.

I Europa översätts utländska filmer, dokumentärer och nyhetsinslag vanligtvis med dubbning eller undertexter. En positiv effekt av undertextning är att den som tittar samtidigt övar ett främmande språk. Men en nackdel är att personer med lässvårigheter får svårt att hänga med. Många med dyslexi undviker därför utländsk film och TV som översatts med textning. De stängs därmed ute från både kunskap och kultur.

Sedan ett par år tillbaka driver Dyslexiförbundet FMLS ett projekt inom vilket vi utvecklar en tjänst för uppläsning av undertexter på bio. Samma tjänst fungerar även för uppläsning av syntolkning. Idén är att man lyssnar på uppläsningen i sin egen smartphone, med sina egna hörlurar.

Det finns nu planer på att vidareutveckla applikationen som vi har tagit fram, så att den även ska fungera för TV. Vi är flera partners, varav en är Sveriges Television. Applikationen kan även användas i andra situationer, till exempel för tolkning under seminarium.

Seminariet inleds på engelska med 10 minuters presentation av applikationen och 20 minuters föreläsning om Talande Textremsa, om användarnas behov och önskemål och teknikens möjligheter. Seminariet avslutas med en kort presentation på svenska. Du kan lyssna till översättning till svenska respektive engelska i din smartphone. Appen finns för ios och android.

Eva Hedberg, projektledare för projektet Talande Textremsa

Module des Wiener Rechtschreibtrainings

Renate Hofmann

Gelungener Schriftspracherwerb zeichnet sich durch die richtige Anwendung von Rechtschreibkompetenzen aus. Im Referat wird auf einen kindgemäßen, individuellen und ökonomischen Weg im Erwerb von Rechtschreibkompetenzen eingegangen. Es wird auf die Bedeutung von entwicklungspsychologischen Gegebenheiten hingewiesen genauso wie auf den Stellenwert von Grundwortschätzen. Lerntypgerechte Möglichkeiten im Schriftspracherwerb kommen ebenso zur Sprache wie der Hinweis auf Lernstrategien, die Schülerinnen und Schülern helfen sollen, Texte richtig zu schreiben.

The Three C's
Curiosity, Creativity and Collaboration or Counting Computation and Calculation?

Judy Hornigold and Anne McLoughlin

This workshop will explore the heart of mathematics and its relevance to our everyday lives. It will highlight how mathematics is intrinsically linked to the world around us and how we can use this to elevate our mathematics teaching to a more open ended , creative style of pedagogy.

It will question whether we are failing children in schools today by delivering a curriculum based on rote learning and procedure. It will examine which of 'The Three C's' we are working towards in schools. Are we striving for Curiosity, Creativity and Collaboration or are we focused on Counting, Computation and Calculation?

Gilmore and Hawkins (2003) assert that collaboration and creativity are key to teaching mathematical concepts

The workshop will explore the notion that mistakes are good and that mathematics is a process of guessing and trial and error rather than a quest for perfection and the correct answer. This will be achieved through open ended investigations that rely on collaboration and creative thinking in order to solve a variety of problems with varying degrees of complexity. It will demonstrate how the essential skills of calculation can be mastered by being interwoven into more creative mathematical enquiries.

The workshop will aim to illustrate how we can empower children to become instrumental in their own mathematical adventure and to foster the enthusiasm and confidence to explore maths in an unrestricted and confident way.

Gilmore, J and Hawkins, A (2003). *The Lesson Study Approach: Collaboration and Creativity Are Key to Teaching Mathematics Concepts*

Published in *SEDL Letter* Volume XV, Number 1, December 2003, Improving Achievement In Mathematics and Science

Abstract of communication proposal for EDA 2013 conference

The first French genome wide study in dyslexia indicates Xq27 FAXA locus as a strong candidate in familial cases.

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Background: Dyslexia is a complex neurodevelopmental learning disorder that affects 5 to 10% of school age children. Whereas dyslexia prevalence differs according to language complexity, both imaging and electrophysiological studies have evidenced the same neuronal networks whatever the language. Recent researches have revealed that this networks integrity relies on genetic influence. Concurrently, familial aggregation has lead to explore genetic risk factors in different US and European countries (without any French data). To date, 9 susceptibility loci have been identified. One of them, DYX9, is located in Xq27.

Methods: We performed the first French genetic study in 12 families (58 subjects) with at least two dyslexic subjects according to categorical restrictive criteria for phenotype definition. We used SNP genome wide linkage analysis followed by candidate gene investigation.

Results: Significant results emerged on Xq27.3 within DYX9. The maximum multipoint LOD score reached 3,884 between rs12558359 and rs454992. Within this region, 7 candidate genes were investigated for mutations in exonic sequences (*CXORF1*, *CXORF51*, *SLITRK2*, *FMR1*, *FMR2*, *ASFMR1*, *FMR1NB*), all having a role during brain development. We further

looked for 5'UTR trinucleotide repeats in *FMR1* and *FMR2* genes. No mutation or polymorphism co-segregating with dyslexia was found.

Conclusion: These findings in French families with Dyslexia showed significant linkage on Xq27.3 enclosing FRAXA. These results confirmed that DYX9 region is also a robust susceptibility locus for dyslexia in French population.

Dyslexia and Multilingualism: exploring perceptions and experiences of children, parents and professionals undertaking a structured literacy programme

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Background:

This Big Lottery funded mixed-methodology project addresses policy directives on diversity, equality and inclusion, supporting development of skills needed for communication and curricular access through the delivery of a structured dyslexia-friendly literacy-skills programme with 211 bilingual EAL children at risk of dyslexia.

Research question

What are the perceptions and experiences of children, parents and professionals involved in this 15 week intervention, which comprised a daily half-hour small group (2/1) TA-administered programme of paired reading or dyslexia-specific literacy skills for bilingual children at risk of dyslexia?

Methods:

Focus groups were designed to explore the perceptions and experiences of those undertaking the project. This data widened the range of views and issues collected and provided a complementary perspective to the quantitative data collected. They offered the researchers one way of understanding whether there were shared perceptions of the assessment and intervention programmes. Focus groups were conducted in six schools with a sample of children, parents, Teaching Assistants and SENCOs to explore:

1. SENCOs and TAs:

- Dyslexia and multilingualism
- Supporting children with literacy difficulties
- Implementing the structured literacy programme
- Taking part in the research

2. Parents:

- Their child's progress in literacy
- How the intervention programme has helped their child?
- literacy across languages and dyslexia
- questions about dyslexia and the research

3. Children: emphasis was placed on asking children to help researchers evaluate the programme by:

- Stating what they liked/disliked about the materials used
- How they feel they have improved
- What has helped /not helped them most

Findings:

Presented as thematic analysis of each focus group with an emphasis on responses to the intervention programme.

Children's perceptions:

Theme 1: Progress in reading

Theme 2: Reflection on intervention programme

- Their preferences
- How they talk about texts, sessions, relations with TA and general engagement

Theme 3: Being bilingual readers

Parents:

Theme 1: On the growth of confidence and enthusiasm for reading

Theme 2: Value and perceptions of education

TAs:

Theme 1: Children's responses to the intervention programmes

- Progress
- Value of different elements of the intervention

Theme 2: The importance of 'special time'

Theme 3: TA's professional development

Explores the implications for:

- The value of children's, parental and professional views on dyslexia and multilingualism
- a qualitative approach which includes wider perceptions and experiences of dyslexia and multilingualism

Abstract : In Swedish, EDA 2013 Christer Jacobson, Linnaeus University

Word decoding performance related to school marks in English and Math and later academic education

Poor readers in grade 2 in Sweden had lower school marks in all subjects in school at the end of Compulsory School. Especially the marks in English and Math were far below a matched control group. This paper discusses school marks in English and Math up to at the end of secondary school based on reading performance and cognitive measurements in grade 3. Multiple regression methods on different dependant variables of English and Math were used. The study also tries to show the impact of academic studies after compulsory schooling on adult decoding performance, i.e. at the age of 29. We have followed the decoding development from grade 2 up to the age of 29 in a group of poor readers compared to a control group of normal readers. The main differences between the groups were seen in the intercepts that were much higher in the control group. After grade 9 the slope in the control group still increased, but not in the group of poor readers who instead levelled out and reach a word recognition plateau.

Title: **Focused MLD intervention based on the classification of MLD subtypes**

Abstract

Doing mathematics requires a wide variety of skills pertinent to quantity, symbols, language, and space; accordingly difficulties may arise in any of these domains and Students with Mathematics Learning Disability (MLD), may present with different profiles. We herein suggest a classification scheme of MLD, based on clinical observations as well as cognitive psychology and neuroscience data, comprising of four subtypes with regards to the specific impairments presented: the Non-verbal, Memory, Visual-Spatial, and the Logical subtype. Specific systems involved and typical mathematical difficulties-abilities are listed for each subtype. The aim of the present oral presentation is to discuss the profile of each MLD subtype and to further describe the application of an intervention focussing on each student's strengths.

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Vorschlag für einen 90-minütigen Workshop

Morphembasiertes Rechtschreibtraining mit MORPHEUS – Ein besonders ökonomisches Übungskonzept mit vielen Möglichkeiten

Mit dem morphembasierten Segmentierungstraining MORPHEUS wurde unter ständiger wissenschaftlicher Evaluation durch die Universität Graz ein besonders ökonomisches Grundwortschatztraining für die 4. bis 8. Klassenstufe geschaffen und in den letzten Jahren inhaltlich und konzeptuell weiter entwickelt.

Der Workshop bietet zunächst einen Überblick über das theoretische Konzept der morphematischen Bewusstheit, stellt anschließend die daraus resultierenden Übungsformen für die Praxis vor, wie sie im multimedialen MORPHEUS-Paket eingesetzt werden, und fasst die wichtigsten Ergebnisse der unterschiedlichen Evaluationsstudien zusammen.

Im Programm lernen die Kinder nach einem festgelegten Stufenaufbau einzelne Wortstämme, von denen dann die Einzelwörter abgeleitet werden (z.B. ziehen, erziehen, Erziehung). Auf diese Weise können auch schwache Rechtschreiber/innen rasch eine große Menge an Wörtern richtig schreiben. Die Erklärung der wichtigsten orthographischen Regeln des Deutschen sowie das Training der wichtigsten Wortstämme aus diesen Regelbereichen garantieren, dass ein umfassender orthographischer Schreibwortschatz aufgebaut wird.

Das Trainingsprogramm besteht aus einem PC-Programm, einem Übungsbuch, Memokärtchen sowie einem Wortbaukasten mit den wichtigsten Wortstämmen sowie Vor- und Nachsilben. Die vielfältigen (zum Teil spielerischen) Übungsformen werden im Workshop ausführlich dargestellt.

Ebenso wird ein Ausblick auf die Weiterentwicklungen von MORPHEUS gegeben. Eine MORPHEUS-Erweiterung mittels eines größeren Grundwortschatzes, die Anwendung des morphematischen Prinzips auf die Fremdsprache Englisch bzw. Deutsch als Zweitsprache wurden in den letzten Jahren in Kooperation mit der Universität Graz entwickelt und evaluiert.

Die Wirkung des Trainingsprogramms auf die Rechtschreibleistung wurde behavioral und neurophysiologisch überprüft und die Ergebnisse konnten auch in einschlägigen Fachzeitschriften publiziert werden. Alle Ergebnisse belegen einen positiven Trainingseffekt für die morphematische Bewusstheit und die Rechtschreibleistung.

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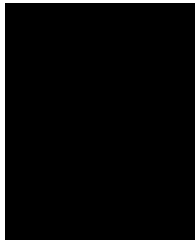
Ältere Jugendliche und Erwachsene mit Dyslexie – welche Methoden und Instrumentarien sollte eine sinnvolle Dyslexietherapie enthalten?

Was haben Albert Einstein, Whoopy Goldberg und Walt Disney gemeinsam? Es wird von allen berichtet, dass sie innerhalb der Schule Probleme mit der Schriftsprache hatten. Dennoch haben sie im Leben Hervorragendes geleistet, und ihre Schwäche scheint im Hinblick auf ihre Erfolge bedeutungslos zu sein. Doch nicht immer haben Menschen mit Dyslexie es einfach, ihr Leben zu meistern. Oft stoßen sie an ihre Grenzen, wenn es um geschriebene Sprache geht oder sie in Prüfungen unter Druck gesetzt werden. Sie geraten unter Stress, versuchen ihre Schwäche zu verbergen oder müssen gar um ihre berufliche Existenz fürchten. Während ihrer Schulzeit wurden keine oder ineffektive Hilfen eingesetzt, so dass sie auch als Erwachsene noch unter ihren Schwierigkeiten zu leiden haben. Wir wissen heute, dass ständiges Pauken mit langen Diktaten oder rein psychotherapeutisch orientierte Verfahren betroffenen Menschen nicht weiter helfen. Die Ursache des Problems liegt in der visuellen und auditiven Verarbeitung des Gehirns, und aus diesem Grund muss eine Therapie auch in diesen Bereichen ansetzen.

Doch wie können Erwachsene ihre Schwäche meistern? Wie ist es möglich, eine Therapie in einen ausgefüllten Tagesablauf zu integrieren? Und wie sieht es mit den psychischen Befindlichkeiten aus? Sind nicht die in der Schule erlebten Misserfolge und Frustrationen bei der Beschäftigung mit der Schriftsprache noch im Erwachsenenalter präsent, so dass Lernen gar nicht möglich ist? Können diese Ängste und Widerstände durch neue Lernerfahrungen überwunden werden?

Der Vortrag erörtert, welche Instrumentarien eine Therapie für ältere Jugendliche und Erwachsene beinhalten muss und wie erfolgreiches Lernen möglich wird. Auch wird gezeigt, wie der Einsatz von Lernmaterialien oder Computer-Programmen zum häuslichen Lernen gestaltet werden kann.

Bettina Kinn, Leiterin des „Forum Legasthenie“ in München, war maßgeblich am Aufbau einer privaten Realschule mit hohem Anteil an legasthenen Schülern beteiligt und betreut mittlerweile erfolgreich erwachsene Legastheniker. Ihre Erfahrungen zeigen, dass auch ältere Jugendliche und Erwachsene sich durch eine spezifische Dyslexietherapie in der Schriftsprache deutlich verbessern können.



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Konsensusprojektet, och sen då?

I konsensusprojektet 2001-2005 enades 24 svenska läsforskare om en gemensam beskrivning av läs- och skrivsvårigheter, läs- och skrivinlärning och läs- och skrivinlärningspedagogik. Materialet sammanställdes av Mats Myrberg, dåvarande professor i specialpedagogik. Målet var att få ett slut på "The Reading War" och i stället fokusera på framgångsrika pedagogiska åtgärder.

Myrberg (2003) hänvisar till en liknande sammanställning i USA, vars slutrapport presenterades 1998. Rapportförfattarna beskrev tre slag av verkningsfulla åtgärder för att förhindra och möta läs- och skrivsvårigheter:

- *Primär Prevention* förhindrar att problemet sprider sig ...
- *Sekundär Prevention* reducerar problemet i riskgrupperna....
- *Tertiär Prevention* innebär riktade specialpedagogiska eller

kompensatoriska insatser till redan drabbade ...

I slutrapporten 2005 resonerar Myrberg kring följande frågeområden:

1. "Vad kännetecknar god praxis när det gäller att upptäcka och diagnostisera läs- och skrivsvårigheter?"
2. Vilka karakteristika har pedagogik eller kompensatoriska insatser som verksamt möter manifesta läs- och skrivsvårigheter?"

Helsingborgs Stad har genomfört ett antal gedigna satsningar för att leva upp till Konsensusprojektets intentioner:

- Investeringar i alternativa lärverktyg till alla elever i kommunens skolor
- Inrättandet av ett skoldatatek med två specialpedagoger och en tekniker för att sprida kompetens kring verktygen, utbilda pedagoger och möta elever och föräldrar.
- Två högskoleutbildningar, *Alternativa lärverktyg i lärandet*, i Linneuniversitetets regi. har genomförts för specialpedagogerna i kommunen.
- En satsning på "Läs- och skrivpiloter" som förmedlar sina kunskaper om läsning och läsinlärning till pedagoger.

Skoldatatekets specialpedagoger Michael Bäcklund och Elisabeth Klevborn redogör för framgångsfaktorer, såväl som svårigheter i arbetet med att realisera Konsensusprojektets intentioner.

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Emergent literacy and reading comprehension in primary school

Introduction

Whitehurst and Lonigan (2003) view literacy-related behaviors occurring in the preschool period as important aspects of the developmental continuum of literacy. Learning to read is not only a process of matching visual symbols to units of sound (Ziegler & Goswami, 2005), even in early elementary school, students must be able to move beyond literal meanings and determine story theme or interpret characters' motivations to comprehend a text (Westby, 2004).

A metaanalysis indicated, that "concepts about print", measured in kindergarten age (e.g. Clay, 2000), seems to be a quite powerful predictor of later reading comprehension (National Early Literacy Panel, 2008). Those concepts are seen to be acquired through literacy practices like reading aloud. Purpose of the current studies is to analyze the relations between early literacy and reading comprehension in primary school.

Method

Study 1) is a cross-sectional study which relates previous literacy practices (parents' questionnaire) with reading comprehension (standardized test) in approximately 120 grade two students.

Study 2) is a longitudinal study, analyzing a subgroup of approximately 35 students. Data from kindergarten age about literal aspects at home (parents' questionnaire) and in kindergarten (teachers' questionnaire) will be used to predict reading outcomes in grade one (test of reading and writing competence) and grade two (reading comprehension test).

Results

Data are not yet available, previous results showed significant small to medium-sized correlations.

Discussion

Results will be discussed in order to theoretical aspects and empirical findings concerning predictors like phonological awareness.

(248 words)

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Tune Time abstract

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Tune Time* is a musical early literacy program developed with the express purpose of adding value to synthetic phonics programs and thus supporting early phonological learning in the classroom. The Tune Time songs feature rhyming couplets and use high frequency and regular words as appropriate for the Year 1 classroom. They also consist of strong tunes with prominent beat and action to underline key words and aid comprehension. The Tune Time songs are based on common Year 1 cross-curricular topics and thus promote integrated learning.

Three classrooms in two schools in areas of social disadvantage in Bedford incorporated Tune Time into their classroom teaching in the autumn term of 2012/13. In both of these schools children enter with literacy skills which are below the national average. Before and after standardised and bespoke measures of verbal ability and phonological awareness demonstrated a specific benefit in the ability to produce rhyming words for children involved in the Tune Time program. This benefit was statistically significant when compared to control children from a similar school who were not receiving any additional literacy program.

Here we discuss the details of the Tune Time project and the ability for rhythm, rhyme, action and melody to support the literacy needs of all children. We include a discussion of the particular importance of these elements for children who are making a slow start in their literacy development and may go on to have reading problems.

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Four-generation pedigree with dominant inheritance of developmental dyslexia reveals a novel locus on chromosome 4q

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Developmental Dyslexia is a specific reading and writing disability. There is a compelling body of evidence that developmental dyslexia is highly heritable. Up to now, at least nine dyslexia susceptibility loci have been identified.

In this study, we investigated a four-generation pedigree where dyslexia follows an autosomal dominant inheritance pattern. Genome wide SNP genotyping and parametric linkage analysis in this family revealed a single prominent linkage interval on Chr4q, containing a putative novel locus for familial dyslexia. All protein coding exons and exon-intron boundaries within this interval were sequenced in one affected and one unaffected family member. Sanger- as well as next-generation sequence analysis revealed a nucleotide change in the 3' UTR of a brain expressed gene (*SPRY1*) in the dyslectic family member that was not found in the unaffected individual. The DNA-change might affect the binding efficiency of miRNAs and thus have an influence on the expression of the detected gene product.

In addition we screened this gene in 96 individuals from a cohort of dyslectic individuals and found a heterozygous change (Y29C) in one proband and not in his unaffected sister, which underlines the likelihood of an involvement of *SPRY1* in the aetiology of dyslexia.

Ein Vier-Generationen-Stammbaum mit autosomal dominanter Vererbung von Legasthenie weist auf einen neuen Genort auf Chromosom 4q hin.

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Legasthenie ist eine spezifische Behinderung beim Erlernen von Lesen und Schreiben. Es ist gibt überzeugende Hinweise, dass Legasthenie genetische Ursachen hat. Bisher wurden mindestens neun Genorte identifiziert.

In dieser Studie untersuchten wir einen Vier-Generationen-Stammbaum mit einer autosomal dominanten Form der Legasthenie. Mit Hilfe von genomweiter SNP-Genotypisierung und parametrischer Kopplungsanalyse konnte in dieser Familie ein einzelnes prominentes Kopplungsintervall auf Chr4q bestimmt werden.

Alle Protein-kodierenden Exons und-Exon-Intron-Grenzen innerhalb dieses Intervalls wurden in einem betroffenen und ein gesunden Familienmitglied sequenziert. Die Analyse mittels Sanger- und „Next-Generation“ Sequenzierung ergab eine Nucleotid-Änderung in der 3'UTR des Gens *SPRY1*, welches auch im Gehirn exprimiert wird. Durch diese Missense-Mutation wird möglicherweise die Bindungseffizienz bestimmter miRNAs verändert und damit die Expression des Genprodukts beeinflusst.

Darüber hinaus ergab ein Screening dieses Gens in 96 Individuen aus einer Kohorte von Legasthenikern bei einer Indexperson eine weitere Missense-Mutation (Y29C), die nicht bei deren gesunder Schwester vorliegt. Dieser Befund aus einer zweiten unabhängigen Familie unterstützt die Schlussfolgerung, dass *SPRY1* eine Rolle bei der Ätiologie von Legasthenie spielt.

Abstract proposal for Oral presentation

European Dyslexia Association Conference September 2013

Executive functioning, workplace success and dyslexia in adults

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This **oral presentation** proposal is from an **academic perspective**.

Abstract

Many dyslexic adults have developed their literacy skills to a competent level but residual difficulties remain with reading speed, comprehension, and spelling. Moreover, they often experience other cognitive difficulties linked to inefficiencies in working memory and executive functioning. The aim of this study was to investigate working memory and executive functioning skills of dyslexic adults and their contribution to workplace success.

Sixty dyslexic adults and 25 age-matched controls were assessed on a range of cognitive measures and answered questions about their employment, work satisfaction and problems with completing cognitive tasks. Neuropsychological assessments focused on executive functioning, and included measures of inhibition, set shifting and updating tasks to provide a comprehensive picture of the individuals' strengths and difficulties in these areas. Additional measures of working memory and literacy-related skills were also undertaken to ensure that the sample met current criteria for inclusion within a dyslexic cohort.

Analyses confirmed that the dyslexic adults showed evidence of poorer performance in measures of literacy-related skills, consistent with continued dyslexia-related problems. The

results also indicated significant differences between groups on set shifting and updating measures of executive functioning, but not on inhibition tasks. There were also significant relationships between evidence of appropriate planning (meta-cognitive skills) and measures of work-success.

Conclusions will be discussed with a view to informing theories about the relationship between working memory/executive functioning and dyslexia. Findings also will be considered in terms of the range of appropriate interventions that can be used to support adults with dyslexia.

Språklig förmåga hos en grupp elever med svag avkodning och läsförståelse i åk 2

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Bakgrund : Ett flertal studier har visat att det finns ett samband mellan språk (t ex ordförråd och grammatik) och läsförståelse, samt mellan fonologisk förmåga och avkodning. Många skolor genomför regelbundet screeningar av alla elevers avkodning och läsförståelse, men i skolan har man sällan kännedom om den språkliga förmågan hos elever med lässvårigheter. Det finns ett behov att identifiera hur den språkliga förmågan ser ut hos elever med svag läsförmåga med tanke på planeringen av de pedagogiska insatsernas inriktning. **Metod:** 35 elever med avkodning och/eller läsförståelse under förväntat resultat för åldern (< 1 SD) i åk 2 deltog i studien. Elevernas språk- och läsförmåga utreddes av logoped i åk 3. One-way anova genomfördes för analys av om det finns signifikanta skillnader i språklig förmåga mellan grupperna med läsförståelse- respektive avkodningssvårigheter i åk 2. **Resultat:** Elever med svag läsförståelse i åk 2 presterar under förväntat resultat för åldern i hörförståelse uppgift (lyssna till berättelse och återberätta). Hela undersökningsgruppen presterar lägre än förväntat i förhållande till åldersgruppen i ordmobilisering, meningslängd och repetition av nonsensord. Elever med enbart avkodningssvårigheter presterar signifikant bättre än elever med läsförståelse- och avkodningssvårigheter i ordmobilisering och meningslängd.

Läs- och skrivinterventioner med smarta telefoner och surfplattor för elever i årskurs 4-9

Emma Lindeblad¹, Idor Svensson¹ & Christina Sand², Institutionen för psykologi, Linnéuniversitetet.

Flertalet studier har visat på att ett tillkortakommande inom skriftens område kan ge negativa effekter på självbild och psyksikt mående samt påverkar val av utbildning och yrke.

Elever med läs- och skrivsvårigheter eller elever som är i riskzonen att utveckla skriftspråkliga svårigheter bör därför i ett tidigt skede få adekvat stöd för att ge dem större möjligheter att självständigt tillgodogöra sig skriftspråkliga skoluppgifter. Detta kan också ha en positiv effekt på den övergripande motivationen inför skolarbete. Syftet med studien är att studera om ett systematiskt och intensivt användande av läs- och skrivstödjande program i smarta telefoner och surfplattor kan förbättra den skriftspråkliga förmågan för elever med dokumenterade läs- och skrivsvårigheter samt att studera om användningen av dessa verktyg kan stärka elevens skolsjälvbild, self efficacy och motivation för skolarbetet.

I studien utförs interventionerna av lärare och specialpedagog/lärare. Eleverna får använda olika program i mobiltelefonen/surfplattan dels för att träna och dels för att kompensera avseende skriftspråkliga svårigheter. Interventionerna pågår under en timma, totalt 20 sessioner under 5 veckor. Self-efficacy, motivation inför skolarbete, skolsjälvbild samt vissa aspekter av psykiskt mående bedöms genom frågeformulär. Vid tiden för konferensen kommer 50 elever i årskurserna 4-9 ha genomfört interventionerna. De förväntade resultaten är att eleverna förbättrar sin totala litterata förmåga och att detta också ger en positiv effekt på skolsjälvbild, motivation inför skolarbete och elevens self efficacy.

Universitetsstudenter med dyslexi: ett nordiskt perspektiv

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Tidigare undersökningar har visat att universitetsstudenter med dyslexi har lägre genomströmningsgrad på universitetsutbildningar än övriga studenter. Med utgångspunkt från dessa fakta har studier med avsikt att undersöka kännetecken för dyslexi bland universitetsstuderande genomförts på tre lärosäten i Norden: Växjö, Sverige; Åbo, Finland och Aarhus, Danmark. Emellertid har undersökningarna varit av pilotkaraktär då förhållandevis få studenter deltagit. Vidare har de instrument som använts för att diagnostisera dyslexi varierat mellan lärosätena. I en pågående undersökning har de tre lärosätena samordnat olika test som universitetsstudenter med upplevda läs- och skrivsvårigheter genomför. Testen avser att mäta ordavkodning (modersmålet och engelska), fonologiskt processande, arbetsminne och RAN (Rapid Automatized Naming). Dessa instrument har i många tidigare studier utpekats som bra markörer för att fastställa dyslexi. Vid tiden för EDA konferensen beräknas 20 studenter från vardera lärosäte ha genomgått utredningar där ovan beskrivna test ingår. Syftet med undersökningen är att studera likheter och skillnader mellan olika språkgrupper med avseende på tidigare kända markörer för dyslexi. Ett annat syfte är också att utforska skillnader och likheter gällande studenternas tidigare studieerfarenheter, självbild, psykiskt mående och self-efficacy i gruppen med dyslexi från de tre länderna. Projektet är förhållandevis unikt inom området och beräknas tillföra kunskap inom forskningsfältet gällande definitioner, dvs. vad som kännetecknar dyslexi, studenters upplevelse av tidigare studier och studietiden vid universiteten, självbilsfrågor, finna stabila test för att uttala sig kring vilken typ av läs- och skrivsvårigheter studenterna har. Undersökningen förväntas ge nya infallsvinklar för att på ett bra sätt identifiera de studenter som har svårigheter med att hantera skriftspråkliga uppgifter och därmed öka möjligheten att ge ändamålsenligt stöd som i sin tur kan leda till att studenter med dyslexi i högre grad kan slutföra sina studier.

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Paper title: *Learning Difficulties : Is there a relationship between Reading Comprehension and Mathematical Reasoning in clinically referred school-aged children ?*

Summary:

The aim of the present research proposal is to clarify whether children with difficulties in Reading Comprehension (RC) may also face difficulties in Mathematical Reasoning (MR). The sample is drawn from clinically referred school aged children between the ages of 9+ to 16+ years studying in mainstream Greek and English schools. The hypothesis is that difficulties in decoding meaning from reading may negatively affect performance when trying to solve read mathematical problems. The research question would a) examine the relationship between Reading Comprehension(RC) difficulties and Mathematical Reasoning (MR) difficulties. b) Investigate whether low language scores – in specific IQ subtests – are predictors of either RC and/or MR difficulties and c) explore the relationship between individual IQ Verbal subtests and RC and individual verbal subtests and MR. Knowledge of the relationships among these cognitive abilities and RC skills may provide a better understanding of the cognitive precursors of MR problems and help in the development of a more structured and specific educational support.

Polish dyslexic students' difficulties in reading and spelling in English

- Marta Łockiewicz, Martyna Jaskulska

Persons with dyslexia have great difficulty in mastering reading and spelling in their native language (L1), which is well documented (Beaton, 2004, ICD-10, 2000, Nicolson & Fawcett, 2008). However, there are few reports of problems of persons with dyslexia in the correct reading and writing in a foreign language (L2). Research has shown that dyslexics struggle with inconsistencies and irregularities of different spelling systems (Crombie, 1997, Lindgren & Laine, 2011). This concept corresponds to the linguistic coding difference hypothesis (LCDC) (Sparks & Ganshaw, 1993), which assumes a direct relationship between the capacity to acquire/learn the native and a foreign language. The aim of the research is to characterize the difficulties in learning a foreign language L2 (English) by Polish students with dyslexia, and to present a classification of errors in writing in English. The participants will be 1st & 2nd year high school students (30 in the criterion & 30 in the control group). We will administer an IQ test, reading in Polish test, English vocabulary test (Nation, 2001, 2009), and the experimental methods by Łockiewicz and Jaskulska: English words spelling, words & pseudowords reading. The expected result is to demonstrate that the difficulties in reading and writing characteristic of dyslexia are not limited to the native language. We will describe the most characteristic difficulties and errors produced by Polish students in reading and writing in English, and develop a classification of these errors.

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Title: Reading comprehension in Polish dyslexic learners of English

Abstract:

As reported by Nation and Snowling (1998) children with normally developing reading skills were observed to develop adequate comprehension and decoding skills, whereas dyslexic students were observed to have poor decoding with intact reading comprehension. The present study investigated reading comprehension of twelve year old Polish dyslexic (N=15) and non-dyslexic (N=15) EFL learners with respect to these findings.

A measure of reading comprehension was manipulated in relation to Polish L1 and English as a foreign language. Each student read three stories in Polish and then three stories in English. After reading each text, a gapped summary was given to the student for completion. Students were encouraged to ask the meaning of any words that they did not understand, both in the text and in the summary. They were provided with a Polish translation of individual words when required. The study revealed that there were no significant differences in reading comprehension in Polish between the dyslexia and the non-dyslexia groups. Unlike L1 the difference in performance on reading comprehension in English between the groups was statistically significant. The non-dyslexia group showed better comprehension of English texts than the dyslexia group. The difference was statistically significant. Reported in the present study asymmetrical transfer of reading comprehension skills between L1 and EFL in the dyslexia group contributes to the discussion on the validity of dyslexia screening tests. Further research is needed to investigate to what extent conclusions drawn from L1 screening tests are relevant to remedial work in EFL.

Reference

Nation, K., & Snowling, M. J. (1998). Individual differences in contextual facilitation: Evidence from Dyslexia and Poor Reading Comprehension. *Child Development*, 69(4), 996-1011.

Dyslexi i en föränderlig medievärld.

Dyslexi kan leda till att man får svårt att tillgodogöra sig texter och att skriva, men det är ingen nödvändighet. Svårigheterna uppstår i en specifik situation med vissa förutsättningar. Om förutsättningarna ändras kan resultatet bli ett annat. De kognitiva/språkliga förmågorna samspelar alltid med miljön och genom bättre kunskap om förmågorna kan hinder tas bort.

Inte minst innebär medieutvecklingen att nya kognitiva utmaningar uppstår. Att kombinera text med bild, film och grafisk form kan göra innehållet begripligare, men det kan också skapa nya hinder. Samtidigt försvinner i snabb takt specialanpassningar för personer med dyslexi till förmån för kommersiella produkter med större tillgänglighet. En viktig sådan övergång sker nu med "handikapp"-standarden Daisy för talböcker, som implementeras i den kommersiella ljudboksstandarden e-pub.

De som bäst kan avgöra vad som behövs och vad man bör tänka på är de personer som själva har olika typer av kognitiva nedsättningar. Dyslexiförbundet FMLS driver därför tillsammans med några andra handikappförbund ett projekt där personer med egna svårigheter får möjlighet att ställa dem i relation till kognitionsforskning, andras sätt att fungera och till konkreta situationer. Syftet är att de utifrån bred kunskap och egna erfarenheter ska kunna precisera förslag till förbättringar och krav som bör finnas med i svensk och internationell standardisering av tjänster, produkter och processer.

Torbjörn Lundgren är författare och projektledare och har under lång tid varit verksam inom Dyslexiförbundet FMLS och Svenska Dyslexiföreningen.

Proposal for Communication

EDA
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Title: Specific Learning Disabilities in Math - Dyscalculia. Assessment protocol and Characterization of CADIn population

Abstract:

Ten years ago CADIn, the Center for Child Development, started to work with Specific Learning Disabilities with an assessment protocol that includes formal psychological tests, and educational tests. From all the SLD children evaluated, 36% has intervention in the centre. The reason why there are so many people seeking for our help is that portuguese government fails to give them a proper answer to their specific needs. By following an Individualized Education Program (IEP) for each children CADIn aims to help each one to fulfill their goals and the amazing capacities they own.

All interventions are individual, individualized, and researched based, furthermore we always make suggestions for regular school interventions and try to involve the family in the intervention process.

Lately we have noticed a growing number of evaluation requests concerning to Mathematic difficulties and, as we do research based intervention, we also noticed that there is a lack of agreement on how to define Dyscalculia.

In this **session/poster** we'll present our assessment protocol on math difficulties and the characteristics of the population we work with, trying to find out what are the common characteristics of children who are given the Dyscalculia diagnosis.

**Workshop Proposal: European Dyslexia Association Conference.
Vaxjo, Sweden. 20th to 22nd September 2013**

Ideographic Interventions in Higher Education and the Workplace: Evidence based practice

David McLoughlin, Independent Dyslexia Consultants and the University of Buckingham

Carol Leather, Independent Dyslexia Consultants and the University of Surrey

(The emphasis of the workshop will be on professional practice)

The needs of many dyslexic people are not addressed because of a 'one size fits all' nomothetic approach to intervention, as well as the focus on literacy skills. Those who seek assistance in third tier education or the workplace are often faced with this, the assumption being that the needs of all dyslexic people can be addressed in the same way. Although dyslexic people have much in common, they are individuals whose needs differ, particularly as demands increase at times of transition. This workshop will focus on individualised or ideographic approaches to the development of skills, compensation through the use of assistive technology as well as low tech aids, and accommodations such as extended time to meet targets and complete assessment tasks.

The presenters will demonstrate how evidence from the assessment and interviewing of dyslexic adults can be used to individualise interventions. Illustration will be through reference to case studies. Participants will have the opportunity to analyse assessment results, and make recommendations for suitable interventions based on examples of individuals experiencing difficulties whilst studying at an advanced level, as well as in employment settings.

Response to an Intensive Reading Intervention as a Function of Age, Phonological Processing,
and Sublexical Sound-Spelling Automaticity.

Jamie Metsala¹, Sarah Arnold² & Eryn Steele²

Early interventions for young children with or at-risk for reading difficulties have been shown to be effective (e.g., Vaughn, 2009). Interventions with children in all but the earliest years of schooling may need to be more intensive or lengthy, and closing the achievement gap in reading fluency may be a particular challenge for older children with reading difficulties (Torgesen, 2006). In the current study, a sizeable data set was employed to examine students' response to an intensive, evidence-based reading intervention (SpellRead™) as a function of age at intervention onset, and of several additional pre-intervention and early response factors. Children's pseudoword reading, word reading, reading comprehension, and text-reading fluency were measured at pre-test and following each 40 hours of instruction (typical length of program, 120 hours). To address effectiveness with older versus younger children (grade 3 and above vs. K-grade 2), mean standard scores and the proportion of children attaining average level skills in reading at intervention completion were compared. In addition, the unique contribution to children's growth in each area of reading was examined as a function of age, phonological awareness and memory, letter knowledge, and spelling. Finally, one focus of the SpellRead™ program is on building automaticity with sublexical sound-spelling associations. The length of time taken for a child to gain automaticity with the earliest sets of sound-spelling patterns was examined as a unique predictor of growth in reading skills, with particular attention to the relation between facility in gaining sublexical automaticity and achievement in text-reading fluency.

Torgesen, J. K. (2006). Recent discoveries from research on remedial interventions for children with dyslexia. In M. Snowling & C. Hulme (Eds.), *The science of reading: A handbook*. Oxford: Blackwell Publishers.

Vaughn, S., Wanzek, J., Murray, C. S., Scammacca, N., Linan-Thompson, S., & Woodruff, A. L., (2009). Response to early reading intervention: Examining higher and lower responders. *Exceptional Children*, 75, 165-183.

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Dyslexia and Multilingualism:

Interventions for bi-lingual English-as-a-second-language children with English literacy weaknesses

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Background:

Currently, some 15% of UK primary school children have English as an additional language (EAL) which may impact on their learning of English literacy in similar ways to learning disabilities such as dyslexia. Weaknesses in linguistic codes of phonology/orthography, syntax and semantics are transferred between languages (Ganschow and Sparks, 2000). SpLD/dyslexia makes a second complex language like English difficult to acquire, hindering literacy development and use of academic language (CALPs).

Research question

The present work investigated whether direct, systematic, multisensory interventions, developed to overcome first language literacy learning problems, can also improve reading and writing amongst children with (EAL).

Methods:

The study investigated the impact of the delivery, by trained teaching assistants (TAs), of a 15-week daily, 30 minute, structured dyslexia-friendly literacy-skills programme to bilingual EAL children at risk of dyslexia.

SpLD/dyslexia is hard to identify in children where difficulties acquiring EAL mask signs indicating risk. A screening protocol was devised and undertaken in 52 schools from 8 UK rural and urban areas, focussing on school years 4, 5 and 6 (ages 8 to 11). From an initial sample of 359 bilingual children identified by school SENCos as failing to develop literacy skills, 211 were identified as children at risk of dyslexia. These 211 children were divided into three groups; two groups undertaking teaching of language-literacy additional to normal school practices. Trained TAs delivered a dyslexia-specific programme (Nessy/Rapid Reading) to the first group and a paired reading programme to a second group. Both programmes also emphasised English vocabulary. A third waiting/ control group experienced typical school classroom teaching methods only. Pre and post-intervention standardised assessments of children's reading, spelling, phonological decoding, receptive language and writing skills were undertaken.

Findings:

The findings supported evidence for specific effects from the interventions. The dyslexia-specific programme improved phonological decoding and spelling more than the paired reading condition, but both intervention groups showing greater improvements in word reading, writing and vocabulary compared to the waiting/control group. Findings argue for the efficacy of structured intervention with bilingual children with EAL.

References:

Ganschow, L. & Sparks, R. (2000) Reflections on Foreign Language Study for Students with Language Learning Problems. Research, Issues and Challenges. *Dyslexia*, 6, pp.87-100



LOTTERY FUNDED

Chromosom 18 im Kontext der Legasthenie bei Deutschen

Einleitung

Wissenschaftliche Studien schätzen die Erbllichkeit von Legasthenie auf 50-70% und haben in den letzten Jahren eine Vielzahl genomischer Abschnitte identifiziert, die einen Effekt auf die Entwicklung von Legasthenie haben. Der Großteil der phänotypischen Varianz ist jedoch weiterhin genetisch nicht erklärbar. Im Kontext der Legasthenie ist Chromosom 18 von großer Bedeutung. Scerri et al. (2010) untersuchten dieses Chromosom in englischsprachigen Kohorten und grenzten die Region auf spezifische Kandidatengene ein. Dabei wurden acht Einzelbasen-Polymorphismen (SNP, engl.: *Single Nucleotide Polymorphism*) in sieben Genen identifiziert. In unserer Studie untersuchten wir, ob diese SNPs und die dazugehörigen Gene auch von Relevanz in einer deutschsprachigen Population sind.

Methoden

Wir analysierten SNPs an acht Genorten in einer Kohorte bestehend aus 388 Legasthenikern und 364 Kontrollen. Dabei kam eine Fall-Kontroll-Analyse mittels eines Chi-Quadrat Verfahrens zum Einsatz. Zusätzlich führten wir eine Quantitative Analyse durch und betrachteten haplotypische und kombinatorische Effekte.

Ergebnisse und Fazit

Für drei SNPs in zwei verschiedenen Genen fanden wir nominale Assoziation mit Legasthenie. Das seltenere Allel eines dieser SNPs wurde als Risikoallel für Legasthenie identifiziert. Die selteneren Allele der beiden anderen SNPs zeigten einen protektiven Effekt und befanden sich in einem starken Kopplungsungleichgewicht. Die kombinierte Analyse der SNPs zeigte chromosomweite Signifikanz für die drei signifikanten SNPs in Kombination. Dies deutet auf eine potenzielle Interaktion der dazugehörigen Gene in der Entwicklung von Legasthenie hin. Die beiden assoziierten Gene sind involviert in die Regulation von Natriumkanälen und in Metabolismus der Plasmamembran.

The relevance of chromosome 18 in Germans in the context of dyslexia

Introduction

Genetic studies estimate a heritability of 50-70% for dyslexia. Several genomic regions with impact on the development of dyslexia were identified in the recent years. However, the majority of the phenotypic variance is still unexplained. One important chromosome in this context is chromosome 18. Scerri et al. (2010) investigated this chromosome in English-speaking cohorts to narrow down this region to potentially involved genes. They identified eight potential dyslexia associated single nucleotide polymorphisms (SNP) in seven genes. We explored if these SNPs and their genes are relevant for dyslexia in a German population.

Methods

We studied SNPs at eight loci in a cohort comprised of 388 dyslexia cases and 364 controls. We carried out case-control analysis via Chi-square statistics. Additionally, we performed quantitative analysis, investigated haplotypic effects, and explored combinatory effects of multiple SNPs.

Results and conclusion

For three SNPs in two different genes we observed nominal association with dyslexia. The minor allele of one SNP was risk associated whereas the minor alleles of the other two SNPs were protective. The protective SNPs were in strong linkage. The combined analysis of the involved SNPs revealed a chromosome-wide significant association for the three significant SNPs in combination. This indicates an interaction among the underlying genes in the etiology of dyslexia. The two associated genes are known to be involved in the regulation of sodium channels and plasma membrane metabolism.

Predicting Reading Disability from Eye Movements

The earlier reading disability is detected in school children, the better the effect of professional intervention. We propose machine learning of eye movements during reading as an objective, efficient and accurate method for detecting children with reading problems, relative to expectations of what is typical for the age and grade level. Based on eye-movement recordings of 103 third-grade children with reading disabilities (RD) and 90 children with normal reading capacity (NR), we train classification models that learn to predict the status (RD or NR) of any third-grade child, given his or her eye tracking record. We evaluate a number of inference models and show that a support vector machine predicts the status of a child outside the training set with an accuracy of 94%. We also investigate how classification accuracy depends on recording time and show that nine out of ten children are correctly classified after only 30 seconds of tracking time. Although eye movements that deviate from normal are symptomatic of reading problems rather than causing them, our results indicate that eye movements can be highly useful for early identification of language-related deficiencies.

Thomas Nordström; Pernilla Söderberg; Christer Jacobson

Linnaeus University

Word recognition as a predictor of academic success – a longitudinal study

This study examines the effects of students' ability of word recognition in grade 2 on outcomes in marks in grade 9. It is believed that students with a high level of word recognition in grade 2 have advantages throughout the educational system compared to students with a low level of word recognition. One of the aims of the study is to investigate the predictive power of word recognition on academic success but also to search for interaction effects between word recognition and cognitive ability. A full Swedish cohort of 2165 students in grade 2 was investigated with two tests of word recognition (Word chains test and OS400) and a non-verbal cognitive ability test (Raven's matrices). Marks in grade 9, subject choices and dropouts subject were collected after the students leaving compulsory school. As expected, preliminary results shows a high correlation between word recognition and marks in grade 9. Additional results will be discussed.

Abstract

Skolstil

Ett enkelt skrivprogram med bokstavsljud och talsyntes

Karin Ohlis

Utifrån mina erfarenheter som lärare i 40 år har jag gjort Skolstil.

Syftet med Skolstil är att med hjälp av modern teknik underlätta för elever med dyslexi.

Skolstil är ett enkelt skrivprogram.

Bokstäverna på skärmen ser ut som de bokstäver elever lär sig att skriva för hand, enligt den vägledning som Nordisk idégrupp för handskrift utarbetade år 2000.

När du trycker ner tangenten på tangentbordet hör du bokstavsljudet. I appversionen läser talsyntes upp ordet vid mellanslag och hela meningen vid skiljetecken.

"Att knäcka läskoden innebär ju att man förstått att ord kan delas upp i fonem och att fonemen kan ljudas samman till ord."

Lundberg, I., & Herrlin, K. (2003): *God läsutveckling*. Natur och Kultur.

Skolstil finns som datorprogram för PC och som applikation för iOS, Android och Windows 8

PC-versionen finns på svenska, norska (bokmål), finska och nordsamiska. Skolstil som applikation finns på svenska, norska, danska, engelska, tyska, franska, italienska, spanska och finska.

Bokstavsljud finns inte i den engelska, tyska och franska versionen.

Ett mail från en pappa:

Min 10-årige son använder nu Skolstil på lektionerna, och det funkar fantastiskt. Redan första dagen kom han hem från skolan och sa: "Idag kände jag att jag var bra i skolan." Äntligen fungerar det. Han är en smart och begåvad kille, väldigt verbal. Äntligen kan han uttrycka sig skriftligen också. Och så detta med att få självkänslan återupprättad. Stort!

Tatyana Oleinik

Andrey Prokopenko

Raymond Claes

EFFECTIVE TRAINING OF FUTURE TEACHERS USING ICT

Observing the rapid growth and wide access to ICT, it is clear that in modern educational practice and to overcome the slowness of positive changes, this creates a new way of learning styles.

The use of ICT plays an important role and needs some psychological counselling to encourage teachers, not only to rethink the feasibility of approaches and methods, but also their position regarding their relationships with students.

As part of our course, students will get knowledge about the didactic possibilities of ICT and the psychological aspects of using ICT in education. Teachers are given various types of practical activities aimed at mastering practical skills of information resources and tools using network communications; they are trained for safe operation and to prevent gaming and Internet addiction.

Our "State program implementing ICT in the educational process" regulates the requirements for ICT competence of the teacher, which implies a high level of proficiency in multiple software products that are supporting parts of the educational process.

Given that in recent years more children and adults are diagnosed having SpLD (a.o. dyslexia, dysgraphia, dyscalculia, etc.) it is necessary to find an effective way of teaching them. There is no doubt that the active involvement of future teachers in the process of the widespread use of ICT requires special attention.

RHYTHM AND READING

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Purpose of the study: to quantify the betterment achieved by students that use my rhythmic method.

Brief subject selection criteria: dyslexic children were compared to normal reading children of the same age.

Methods used for data collection and analysis: I audio and video-recorded the children in performing their tasks, then I reviewed them. This allowed me to count exactly the number of syllables and of words that they were able to read before and after the treatment.

ABSTRACT

My work is founded on the concept that our knowledge is essentially based on our understanding of:

- space - like measure and orientation;
- time - like pulsation, rhythm, length, pause, order;
- space-time - like space of temporal events in which the individual tunes into the collective good.

People without a good intuition of these categories have learning difficulties.

So we can prevent some common didactic difficulties and we can also increase people's learning abilities by improving one's intuition of space and time.

About reading at first my method uses the isochronal-rhythmic movement of the body (particularly of the head) and of the voice. Then it adds the auditory-rhythmic perception by using the metronome because it discretizes the space-time and improves:

- the coordination between movement and voice;
- the speed and fluency of reading

When children's progress is satisfactory we will pass from the segmental to the prosodic reading.

This method gives very good results with poor reading children and with dyslexic children. The latter immediately improved their fluency and correctness in reading.

Basic and higher order skills of children with reading comprehension difficulties

Fotini Polychroni, Department of Psychology, University of Athens

For successful reading, basic skills such as decoding, phonological awareness and vocabulary and higher order skills involved in comprehension, are essential. In specific, poor comprehenders have weaknesses in many language and cognitive skills that may influence their ability to construct text meaning. They may have difficulties with semantic and syntactic skills, or with text processing skills such as integration, inference and comprehension monitoring. The present study investigated basic and higher order skills, specifically comprehension monitoring, of children with dyslexia. The sample consisted of 30, Year 5 and Year 6 primary school students in Athens, Greece, formally assessed with dyslexia. Based on the scores of the reading comprehension test, 16 children were identified as poor comprehenders and 14 as typical comprehenders. Measures of decoding, fluency, syntactic awareness, memory, receptive vocabulary, and comprehension monitoring were used. The results showed that poor comprehenders had lower attainments in decoding, working memory, and morphosyntactic awareness and failed to identify inconsistencies in text, in line with previous research on comprehension monitoring. Comprehension scores were highly related to decoding, fluency, working memory, morphosyntactic awareness and comprehension monitoring but not to short-term memory and receptive vocabulary. The implications of the results for research and for addressing comprehension difficulties of struggling readers are discussed especially as regards higher-order reading comprehension skills.

Identification of reading difficulties before and after onset of reading instruction

Mads Poulsen and Anne-Mette Veber Nielsen, University of Copenhagen

Purpose: Early identification of reading difficulties is important for timely remediation. However, by screening before the onset of reading instruction, we miss out on the best predictor of later reading ability, namely present reading ability. Good predictors are important for identifying most of those children who will turn out to have actual reading difficulties (true positives), while keeping the rate of children who are incorrectly picked out as at risk (false positives) at acceptable levels. This study compared the identification accuracy of screening tools depending on whether the tools were administered before or after reading instruction.

Method: The study compared the rates of true and false positives of three models for predicting end of Grade 2 reading difficulties in a sample of 164 students: 1) an early, comprehensive model using a battery of Grade 0 tests, including phoneme awareness, rapid naming, and paired associate learning, 2) a late, comprehensive model adding reading measures from January of Grade 1, and 3) a late, inexpensive model using only group-administered reading measures from January of Grade 1.

Results: The late screening models provided significantly better identification compared to the early model. There was little difference in accuracy between the comprehensive and inexpensive models.

Conclusion: Cheap group-administered testing in mid Grade 1 provided good identification. Early screening provided problematic identification accuracy, at levels that might be considered unpractical. We discuss how early and late screening strategies can be combined to improve identification accuracy and timeliness.

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Abstract for proposed paper presentation at the 4th All-European Dyslexia Conference 2013

Title:

A longitudinal investigation of the influence of literacy-related skills, reading self-perceptions, and inattentive behaviours on the development of literacy learning difficulties.

Authors:

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Abstract:

Although recent research favours a bidirectional relationship between reading problems and inattentive behaviours, the risk factors at school entry that set in motion these reciprocally interacting relations remain unclear. One possibility is that reading problems are triggered by deficits in phonological processing skills. An alternative possibility is that early reading failure stems from weaknesses in a broader constellation of literacy-related skills. 152 new school entrants who took part in a 7-year longitudinal study of literacy development were assessed on literacy-related skills, reading self-perceptions, behaviour problems, and literacy achievement. Four hypotheses were investigated: first, that weak literacy-related skills during the initial stages of learning to read are associated with early literacy learning difficulties that predict future negative reading self-perceptions and inattentive behaviours which are then related to further literacy problems in a bidirectional manner over time; second, that compared with SES, literacy-related cognitive entry abilities are more directly linked to differences in early literacy development; third, that literacy-related cognitive entry abilities are associated with Matthew effects in literacy achievement; and fourth, that children who become classified as having a reading disorder exhibit greater inattentive behaviours than normally developing readers. The results provided support for these hypotheses and are consistent with the view that early reading problems stemming from initial weaknesses in essential literacy-related skills are predictive of both inattentive behaviours and poor reading self-perceptions which become established and predict further impairments in reading in a reciprocally interacting manner over time. Implications of the findings for early intervention programmes are discussed.

EDA

Specific Learning Disabilities in writing - Dysgraphia.

Characterization of CADIn population

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The SLD field in Portugal has shown a slow evolution. Although parents and teachers recognize this group of children, the government doesn't recognize them. Therefore, many families look for private centers, like CADIn, for identification, assessment, and intervention.

In this session we'll present the main characteristics of the population (handwriting speed, most prevalent errors in handwriting, co-morbidities, kindergarten attendance, manual laterality, structured handwriting intervention, and genre) and our assessment and intervention protocol and the results obtained with the intervention in this specialized center.

Handwriting is an important component of literacy, and handwriting problems can have negative consequences across the curriculum areas (Scheib, Tiburtius, Hartnell, & Henderson, 2003). Handwriting problems include malformation of letters, poor spacing and extremely slow writing and are related to some perceptual-motor skills (Hallahan, Lloyd, Kauffman, Weiss, & Martinez, 2005).

Within the last 9 years, I have assessed 206 children, 164 of these children and youth were identified as having SLD and 49 of these have dysgraphia. In general, our results are in agreement with other published studies, showing a slight predominance of males, and a particular association between dysgraphia and other specific learning disabilities. As expected, reading difficulties were the most common complaint. Most of these children were diagnosed at a relatively early age, although a lot remains to be done in order to increase the general population and teacher's awareness in relation to Specific Learning Disabilities. The results also

show that Handwriting problems include malformation of letters, poor spacing and extremely slow writing and are related to some perceptual-motor skills (Hallahan, Lloyd, Kauffman, Weiss, & Martinez, 2005).

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Assessment and rehabilitation of dyslexia, Evidence Based Practice

Making a good diagnosis of children, adolescents and adults with dyslexia is a process that takes some time. A speech and language therapist or other health professional has to possess first of all a profound insight in all possible test instruments. He also has to possess excellent observational techniques and communication skills. Last but not least, his theoretical background must make it possible to solve this difficult puzzle.

A good rehabilitation program for people with dyslexia is depending several aspects. One of them is of course making a good and extensive diagnosis. But the revalidation demands more than a good diagnostical process. There are some basic therapeutical skills that everyone should have .

Rehabilitation of children with dyslexia is not 'abracadabra', there are no special effects, there are no special things. It is like improving running: you have to prepare yourself (exercises on phonological skills) and finally ... you have to exercise in running/reading. But ... of course there are do's and don'ts. This is the story about the do's and the don'ts based on a practice experience of 25 years. Interference from the European audience is very important: what is working in other European countries and what is not working? We are in for debate !

Rudy Vandevoorde

Quality of life of adult dyslexics

dr Urszula Sajewicz-Radtke – University of Social Sciences and Humanities, Sopot

prof. dr hab. Marta Bogdanowicz – The University of Gdańsk

The speech subject is the quality of life of people affected in their childhood by educational difficulties in the form of developmental dyslexia and comparing it with the quality of life of non-dyslexics.

For an in-depth knowledge of subjects' functioning, the research, apart from global sense of quality of life, focused also on its components i.e. level of self-effectiveness, hope for success, self-esteem, anxiety, intensity of positive and negative emotions, stress management manner and positioning a source of control.

A group of 216 adult subjects, who succeeded in education, was divided into two clinical groups: people with a diagnosed developmental dyslexia (38 persons) and people affected by other learning impairments (50 persons). A control group consisted of 128 persons.

During the research an additional group of subjects with declarative difficulties in learning was singled out, which resulted in qualifying to the control group people who not only were not diagnosed with developmental dyslexia but also considered themselves as not having any impairments in learning neither in the past nor at present.

It was observed during the research, that the examined groups included people who, regardless of group belonging, had or did not have difficulties characteristic of developmental dyslexia in everyday functioning. This criterion for group selection required additional analyzes.

The research results may indicate, that it is not clinical diagnosis of educational impediments which conditions quality of life, but rather the intensity of experienced difficulties. Thus, education planning process requires considering the intensity of experienced difficulties among both: patients diagnosed with educational difficulties and those without such a diagnosis.

EDA – Abstract

Svenska

Ing-Marie Sandberg

Flerspråkiga barns svårigheter med språket; dyslexi eller hänger det samman med andraspråkstillägandet?

Ca 20 % av eleverna i den svenska grundskolan har ett annat modersmål än svenska. Dessa elever ska lära sig svenska så snabbt som möjligt för att kunna nå skolframgång. Det största problemet för de här eleverna gäller förståelsen ($L = A \times F$) men ett antal elever har också problem med avkodningen och dyslexi är lika vanligt förekommande hos flerspråkiga som hos enspråkiga. Eleverna hamnar då ofta på specialpedagogens/- lärarens bord, som i de flesta fall saknar kunskap om att bedöma om elevens svårigheter är av dyslektisk art eller hör ihop med andraspråkstillägandet. Detta är svårbedömt, eftersom det saknas effektiva metoder för att avgöra det. Riskerna finns då att eleverna hamnar i en karusell av felaktiga åtgärder, då risk föreligger både för under- och överidentifiering av den ena eller andra arten. Den forskningsbaserade kunskapen om dyslexi hos flerspråkiga är också begränsad.

Alla lärare möter eller kommer att möta elever med annat modersmål än svenska och måste vara medvetna om och kunna hantera de särskilda förhållanden som gäller flerspråkiga elever. Samverkan mellan olika yrkeskategorier - klasslärare, specialpedagoger/-lärare, lärare i svenska som andraspråk och modersmålslärare – har avgörande betydelse för att kunna identifiera flerspråkiga elever med eventuell dyslexi och åtgärda på ett adekvat sätt.

I denna presentation kommer jag att ta upp några aspekter som lärare behöver vara medvetna om när det gäller flerspråkiga elever bl.a.; vad det innebär att ha sin första läs- och skrivinlärning på sitt andraspråk, hur läs- och skrivinlärningen påverkas av olika språksocialisation, hur inlärarspråket ser ut, vilka kunskaper och insikter som krävs för att läsa och förstå texter och vilka svårigheter det kan innebära för flerspråkiga elever, konsekvenser av att testas på majoritetsspråket samt hur man kan göra en kartläggning för att se hur långt en elev med annat modersmål än svenska kommit i sin andraspråksutveckling.

Mental strain and fatigue in individuals with dyslexia: Behavioral and neurophysiologic evidence with implications for diagnosis and prevention

Workshop

Prof. Shimon Sapir, Ph.D., CCC-SLP

Department of Communication Sciences and Disorders

University of Haifa

Haifa, ISRAEL

Mental fatigue is highly common in children and adults with dyslexia, much more so than in the typical population. In this workshop I will define the concepts of mental strain and mental fatigue and provide behavioral and neurophysiological research evidence for mental strain and fatigue associated with tasks involving central auditory processing and cognitive demands. The adverse impact of mental strain and fatigue on motivation, attention and executive functions in individuals with dyslexia will be considered vis-à-vis reading, learning and mental health. Ways to diagnose and prevent mental strain and fatigue will be presented.

Title: Can word reading fluency be improved in cases with severe dyslexia?

Abstract

The aim of this study was to improve the word reading fluency of Dutch children with severe dyslexia in a clinical setting. Word reading fluency deficits are most characteristic for children with dyslexia learning to read in a relatively transparent orthography. However, this deficit has appeared hard to remediate. Studies report mixed results on effectiveness of treatments which might be partly due to different selection criteria to qualify children for treatment. In this study, the response-to-intervention (RTI) approach was used to select poor readers who showed no or limited progress after lengthy, intensive school-based intervention. An experimental treatment method focusing attention on the mapping between phonology to orthography of sublexical features of words was compared with a neuropsychological treatment method that is often applied in the Dutch clinical setting. Results show that continued outpatient treatment leads to further, though small, improvement of both word and text reading fluency. No differences were found between the two treatment conditions. Follow-up testing showed that the majority of children sustained the reading level that was obtained directly after treatment.

F. Scheltinga, PhD candidate, University of Amsterdam/National Language Centre (Radboud University, Nijmegen)

A. van der Leij, prof. PhD., University of Amsterdam

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A Successful Model for the Prevention of Reading Problems in L1 and ESL students

Purpose

This study was designed to develop and test a system for identifying children at risk for reading difficulties and to test classroom based intervention programs. The early identification and intervention was designed to be effective with children learning English as a second language (ESL) and students who had English as a first language (L1).

The participants in this study were 792 children from a school district in Vancouver, Canada and included 169 ESL and 623 L1 children.

Method

The screening battery consisted of a variety of phonological awareness tasks, a letter identification task, and a syntactic awareness task.

The district used a phonological awareness program called Firm Foundations, which uses activities and games to develop phonological awareness and vocabulary skills. Starting in grade 2, a program, called Reading 44, stressing reading comprehension strategies was used.

Results

In kindergarten, 25% of the L1 group and 54% of the ESL group were at risk for reading difficulties. At the end of grade 7, 1.9 % of the L1 children and 2.3 % of the ESL children were showing dyslexia. Most of the children were reading at levels significantly above the national average.

Conclusions

It is possible to identify young children at risk for reading difficulties. Teachers or other school personnel can do this identification easily. It is possible to use classroom based instruction techniques to develop reading skills, at both the decoding and comprehension level. Early intervention for potential reading difficulties can be successful, efficient, and cost-effective.

Executive functioning and everyday attention in adults with developmental dyslexia

James Smith-Spark, Elisa Edvardsdottir, Adam Ziecik, and Lucy Henry

London South Bank University, London, UK

Abstract

As well as laboratory-based evidence of executive and attentional deficits in dyslexia, self-report questionnaire data have indicated that adults with dyslexia view themselves as more distractible and disorganised than adults without dyslexia in day-to-day life. In order to tie together these different strands of research, a battery of executive and attentional tests were administered to dyslexic and non-dyslexic adults, well matched for age and IQ. Laboratory tasks were administered to probe the updating, inhibition, and set shifting functions of the executive system, together with a self-report measure of executive processes (the BRIEF-A) and the Test of Everyday Attention (TEA), a set of tests designed to tap the type of attentional processes called upon in everyday situations. The results indicated that the participants with dyslexia showed significant impairments on the laboratory measures of shifting, updating, and inhibition. The results of the self-report measure of executive function were consistent with these findings, with the participants with dyslexia rating themselves as significantly worse on the Metacognition Index (measuring planning, monitoring, working memory, and organisation skills) but reporting no problems on the Behavioural Regulation Index of the BRIEF-A. The participants with dyslexia also showed evidence of everyday attentional deficits on the TEA. Taken together, these findings provide further evidence of executive and everyday attentional difficulties in dyslexia. More generally, they highlight how the executive and attentional difficulties associated with dyslexia may play out in employment settings and may help to identify areas in which people with the condition should be supported in the workplace.

PROPOSED TITLE: ‘Cognitive Assessments for Multilingual Learners’ – an holistic approach to identifying dyslexia.

PRESENTER: Dr. Anne Margaret Smith

AFFILIATION: *ELT well*, UK

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Identifying and accommodating Specific Learning Differences (SpLDs), such as dyslexia, among our multilingual learners is not straightforward, because many aspects of SpLDs manifest in the same way as the typical process of learning an additional language. As our communities are becoming ‘super-diverse’ (Vertovec, 2007), both linguistically and culturally, the need for assessment tools that can differentiate between language-based difficulties and underlying cognitive differences is becoming ever more pressing.

‘*Cognitive Assessments for Multilingual Learners*’ (CAML) is a suite of assessment tasks that teachers and assessors can use to identify SpLDs in their multilingual learners. Initially developed to assess adult students learning English in the UK, it has been successfully used with a diverse population (in terms of age, language proficiency (in both first and additional languages) and educational experience). The basic premise of CAML is the removal of the second language element from the assessment task, as far as possible, in order to avoid conflating language proficiency with cognitive function. CAML therefore allows the investigation of literacy development, short term and working memory (auditory and visual) and some key aspects of phonological awareness / processing, regardless of ability in the local language.

A research project leading to the further development of CAML is in progress in 2013, and in this presentation, some of the latest results and findings will be shared. The advantages and drawbacks of using the learner’s first language (or language-free assessment tasks) will be discussed, and participants will be able to try out some of the tasks.

Reference: Vertovec, S. (2007). “Super-diversity and its Implications”. *Ethnic and Racial Studies*. 30(6): 1024–1054.

Dyslexia identification and support in a data-driven educational environment

Dr Ian Smythe, University of South Wales, UK

There is much debate about data-driven decision-making in education in many countries, and concern among teachers that not only will their teachers be unfairly evaluated but also decisions will be made that are not in the interest of the child. While in some cases these concerns may be well-founded, in many it is the fear of change, the fear of accountability and a perception that workloads will increase rather than decrease that leads resistance to what is seen as inappropriate monitoring.

However, with greater use of computers and improved access to the internet, data collection through computerised monitoring has become commonplace. It is now possible for decision-makers at all levels to allocate resources where appropriate, and track progress to provide evidence of learning, and demonstrate that the correct decisions are being made. This will have a significant impact on the identification and support of the dyslexic individuals.

This talk will discuss the issues around the collection and (mis)use of data, and how in the right hands it may be used to effectively identify and support those with reading and writing difficulties, including those with multilingual background. Examples will be drawn from evidence collected from over 20,000 individuals in Ireland (with children), South Africa (with college students) and the UK (with unemployed adults). Comparisons will be drawn and lessons learned will be highlighted in order to suggest an appropriate way forward that is advantageous to all.

Abstract for consideration for the 4th All-European Dyslexia Conference:

'Presentation of research studies into a highly effective method to engage children who are struggling with reading'

Crucially several of the outcomes of this research support the conclusions established in Brooks (2007:31) 'What works for pupils with literacy difficulties?': i) that work on phonological skills for reading should be embedded within a broad approach and ii) working on children's self-esteem and reading has definite potential. The results from these studies provide a fascinating selection of both quantitative and qualitative outcomes in support of the effectiveness of the trugs resource. Improvements were evidenced in children's confidence and self-esteem, fluency and speed of reading and accuracy in decoding.

The Rose Report (2009:1) 'Identifying and Teaching Children and Young People with Dyslexia and Literacy Difficulties' states that there is a need for schools to develop, and implement thoroughly, high quality interventions for these children. During 2012 two independent research studies were conducted in state primary schools (UK) which involved the exploration and evaluation of the impact of targeted reading resource 'trugs' (teaching reading using games) as an intervention tool.

Methods of data collection included pupil questionnaires, parent and teacher interviews and action research with baseline and tracked assessments of attainment. Several of the children identified in the research group were specifically diagnosed with dyslexia or were acknowledged as presenting on the dyslexia spectrum.

Author: Abigail Steel BA Hons Primary Education with English

Full permission has been obtained by the authors of the research studies to present the findings.

The research studies were conducted in accordance with BERA ethical guidelines.

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Proposal for 4th All-European Dyslexia Conference 2013

The predictive validity of a dynamic test of phonological awareness

The aim of this on-going longitudinal study is to investigate whether children's performance on a dynamic test of phonological awareness can add to the variance explained in their later reading abilities after control for more traditional predictors of reading.

A dynamic test with graduated prompts was constructed to measure children's potential for developing phonological awareness. Before the onset of formal reading instruction, the dynamic test was administered to 200 children along with traditional tests of phonological awareness, letter knowledge, vocabulary, and rapid automatized naming. Approximately half of the children were native speakers of the language of instruction (Danish), while the remaining children spoke Danish as a second language.

Reading tests will be administered to the same children at the end of their first school year. The dynamic test of phonological awareness administered before the onset of formal reading instruction is expected to add to the prediction of the children's reading abilities at the end of the first school year after control for their initial performance on traditional tests of phonological awareness, letter knowledge, vocabulary, and rapid naming. It is hypothesized that especially among second language learners the dynamic test will add to the prediction accuracy.

So far, studies of the predictive validity of dynamic assessment of phonological awareness have focused on children with the language of instruction as their first language (e.g., Spector, 1992; Bridges & Catts, 2011). The present study extends earlier research by including a large group of children with the language of instruction as their second language.

Perspective

Primarily academic

Presentation format

Oral

Language

English

EDA - Abstract

Matematik

Görel Sterner

Preliminära resultat av en interventionsstudie i tal och räkning i förskoleklass.

Tidigare longitudinella studier har visat att barns informella matematikkunskaper då de börjar skolan i hög grad predicerar deras senare framgångar i matematik i grundskolan och till och med i gymnasieskolan. Barns erfarenheter av att använda matematik under förskoleåren skiljer sig åt och tidigare forskning indikerar att skillnaderna i matematikkunskaper då de börjar årskurs 1 är stora och tenderar att kvarstå och till och med öka med åren. Syftet med föreliggande studie är att undersöka om det är möjligt att identifiera barn i förskoleklassen som är i riskzonen för att utveckla svårigheter i att förstå och använda tal och i vilken mån strukturerade lekar och aktiviteter kan leda till att barn utvecklar sina föreställningar om tal, siffror, kvantiteter och enkla räkneoperationer.

I studien ingår 120 barn som går i förskoleklass. De har lottats in i en experimentgrupp ($n = 62$, pojkar = 33 och flickor = 29) och i en kontrollgrupp ($n = 62$, pojkar = 37 och flickor = 25). Experimentgruppen har erhållit 10 veckor, 30 minuter träning per dag, med ett teoretiskt väl förankrat pedagogiskt program i tal och räkning, särskilt utarbetat för barn i förskoleklass (Stern, Wallby & Helenius, 2012, *manus*). Kontrollgruppen har på motsvarande sätt erhållit 10 veckor, 30 minuter per dag, med ett teoretiskt väl förankrat program med språklekar, den så kallade "Bornholmsmodellen" (Lundberg, 2007), särskilt framtaget för barn i förskoleklass. En preliminär analys indikerar att experimentgruppen har gjort större framsteg än kontrollgruppen på test i tal och räkning.

Reading interventions on 41 patients in a forensic psychiatric clinic

Idor Svensson, Linda Fälth & Bengt Persson, School of Psychology, Linnaeus University.

Several Swedish studies in recent decades have shown overrepresentations of reading and writing disabilities among patients in forensic psychiatric clinics.

Difficulties in reading and writing might aggravate the treatment procedure, for example the patients' difficulties in communicating with personnel and other patients, reading and understanding patient records, reading texts from judicial systems and authorities and understanding the rules of the clinic. The present study has carried out reading interventions on 41 forensic patients who are struggling readers, including 15 women and 26 men. The patients' reading level was comparable to grade five in compulsory school. The mean age among the participants was thirty years. The assessment includes measures of decoding, phonological processing and reading comprehension before and after the intervention. They carried out 15 sessions of reading and writing interventions during a period of five weeks, each session lasting approximately 45 minutes. The intervention sessions comprised a computer-based program, with the aim of practicing reading, and assistive technology. The result showed that the female patients increased from the years five-six to the year eight level. On the whole, the women had no visible reading difficulties left after completing the interventions. The male patients increased their reading ability by almost two grades. The present investigation shows that a short period of interventions clearly improved the participants' reading ability. In treatment work with psychiatric patients it is important to evaluate and treat possible difficulties with the written language to achieve an optimized treatment procedure.

Confrontation naming and reading abilities at primary school: a longitudinal cohort study

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Purpose: Confrontation naming tasks, in particular the Boston Naming Test (BNT), are useful in the assessment of children with learning and language disorders. The aims of this study were: 1) to provide Italian longitudinal normative data on confrontation naming; 2) to investigate the role of socioeconomic status (SES), intelligence, age and gender in confrontation naming; 3) to identify correlations between confrontation naming and reading abilities (fluency, accuracy, comprehension).

Method: We conducted a five-year longitudinal investigation of confrontation naming in a non-clinical sample of Italian primary school children (n=125), testing them at the end of each school year, to assess non-verbal intelligence, confrontation naming and reading abilities.

Results: In our study, performance on the BNT emerged as a function of IQ and SES. We found significant correlations between confrontation naming and reading abilities, in particular comprehension; BNT scores correlated better with reading fluency than with reading accuracy.

Conclusions: Our study provides longitudinal normative data for a confrontation naming task frequently used in clinical practice (the Boston Naming Test), and focuses on correlations with reading abilities, intelligence, age, gender and socioeconomic status.

Title:

Success factors of reading intervention for children with severe dyslexia: A neurocognitive window on the training-induced development of reading fluency

Authors:

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Abstract

Successful interventions in dyslexia show that reasonable levels of reading accuracy may be attainable, but no effective cure for the lack of reading fluency is available yet. In the present study, we aimed to identify success factors of effective training of reading fluency for severe dyslexia. More specifically, we studied the importance of developing automatic letter-speech sound integration in acquiring fluent reading skills.

A sample of 63 children with dyslexia and 23 control readers, aged 8 to 9, were recruited. Children with dyslexia were allocated to either (a) an intervention that focussed explicitly on letter-speech sound mappings, (b) an intervention that focussed on fast visual word recognition without explicitly addressing the letter-speech sound level, or (c) an untrained control group. Both interventions included 34 individual, 45minute training-sessions over a five months period. To test training-induced changes, pretests, midtests, posttests, and a two-month follow-up test were conducted.

Changes in reading of high-frequency words, low-frequency words, and pseudowords were analysed, as well as in general reading fluency, reading accuracy, spelling and letter-speech sound processing. ERP measurements were also taken at pretest and posttest to examine whether progress in reading fluency is accompanied by neural tuning of a fast response for print.

Results show different patterns of changes in reading and reading-related skills between the two interventions. Furthermore, both interventions show significant progress in reading fluency, compared to the untrained control group. Both theoretical and clinical implications of our results and interpretations of the correlations between behavioural and neural changes will be discussed.

NOTE:

- The proposal is submitted as an **oral** presentation
- The proposal is mainly from an academic perspective, but also has important implications for the professional community.

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Dyscalculia in Higher Education: successful interventional support

"I went to study skills extra support and I had a fantastic maths tutor there...I worked with him and because he knows how my brain works, he knows how it ticks, we managed to get coping mechanisms and strategies..." ('Rebecca, 2011)

In Higher Education (H.E.) dyscalculia poses an increasing challenge particularly with regard to support and intervention.

At Loughborough University there is a strong tradition of Mathematics Learning Support. The service, jointly with Coventry University, was awarded Centre of Excellence in Teaching and Learning status in 2005 and won the Times Higher Education Award for Outstanding Support for Students in 2011. The service includes specialist, one-to-one, mathematics support for neurodiverse students including dyscalculia. The centre was one of the first to establish this specialism.

The paper will report on "student voice" research that explores the availability of interventional support in H.E. in the U.K. and the delivery of this support. This paper will focus on both research and practice in this area. The research, conducted in 2011-2012, consisted of 14 in-depth, semi-structured interviews with dyscalculic students in H.E. The wide range of data collected forms the first such record of the dyscalculic "student voice". This research will inform and underpin the mathematical learning support practice. Further, there will be discussion of the factors contributing to successful interventional support. Additional exemplar case studies will be drawn from our practice.

The paper is from an academic and professional perspective and an oral paper would be preferred.

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Spelling of derivational suffixes by typically developing and dyslexic Greek children: effects of transparency, length and frequency.

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Abstract

submitted for the
4th All-European Dyslexia Conference - 20-22nd September 2013, Sweden

The study aimed to investigate effects of transparency, length and frequency in the spelling of derivational suffixes by 171 Greek school children (ages: 7-14 ½) of typical development, which compared with a smaller group of 15 dyslexic children in the same age spectrum. All children, after evaluated by a standardized measure of spelling ability, completed three experimental tasks entailing spelling of derivationally-related paired items. The first task entailed 44 word-pairs and an equal number of relevant non-words evenly divided in two conditions in terms of phonological transparency (transparent vs. opaque suffixes), where children had to spell the items after dictation. The second task comprised of 40 related words classified in terms of suffix length in one-, two- and three-syllable ones, and children had to correct the wrongly spelled suffixes. In the third task, involving 20 paired-words equally allocated in high and low frequent items in terms of suffix, students were asked to choose the only accurately spelled suffix among three other ones. Main results indicated that the dyslexic group performed significantly lower than the typically developing spellers on the total of spelling tasks. In particular, the effects of phonological transparency and letter length affected considerably both groups, but were stronger for dyslexic students, while the word frequency effect was equal for both groups. These results are compatible with the experimental literature and have important implications for designing adequate assessments of orthography for typically developing children and those with spelling disabilities or dyslexia.

Keywords: Spelling, Derivational Morphology, Suffixes, Dyslexia.

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Title: The dual role of vocabulary knowledge in early literacy development: Implications for the Simple View of Reading (SVR) model of reading difficulties.

Author: William Tunmer, Institute of Education, Massey University, Private Bag 11 222, Palmerston North 4442, New Zealand

Abstract: This presentation summarizes key findings from two studies that have implications for the structure of the Simple View of Reading (SVR) model of reading difficulties. The first study investigated the hypothesis that, in addition to having a direct relation to future reading comprehension performance, early vocabulary knowledge contributes to the development of both decoding and word recognition skills indirectly through “set for variability,” the ability to determine the correct pronunciation of approximations to spoken English words. The second study investigated the hypothesis that the contributions of oral language comprehension (C) and word recognition (D) to reading comprehension (R) in the SVR model are not entirely independent because a component of C (vocabulary knowledge) directly contributes to variance in D. The findings of the two studies have both theoretical and practical implications. Regarding theoretical issues, the findings may provide the basis for resolving differences between the lexical quality and phonological processing accounts of reading acquisition and reading disabilities by specifying linkages between the development of oral language knowledge, phonological processing skills, and word recognition ability. Regarding implications for educational practice, the findings suggest that prevention programs for children at risk of reading failure should focus as much attention on improving these children’s oral language skills, especially vocabulary knowledge, as on improving their phonological and alphabetic coding skills. Greater attention may also need to be given to promoting the development of set for variability in beginning readers.

Dyslexia: Leadership

Understanding and responding to dyslexia is crucial for all schools today. Parents, colleagues and managers need informed advice they can trust, and support they can rely upon. Good leadership, planning and interventions are crucial to delivering positive outcomes and minimising the possibility of conflict between parents and schools.

Dyslexia qualifications exist in the UK that primarily focus on individual and small group teaching (for example British Dyslexia Association accredited Approved Teacher Status and Post Graduate Diplomas). The UK Government has trained more of this type of dyslexia professional following the publication of the influential report by Rose (2009).

We propose that there is also a need for a new type of dyslexia professional in the UK and maybe in other countries too. The focus would be on intervention for individuals, for groups and at school level and across clusters of schools. Training would specifically cater for professionals wishing to exercise leadership. Thus, in addition to a thorough grasp of the latest thinking around dyslexia and practical interventions, professionals would undertake activities that would broaden their professional practice to include leadership skills, managing whole school interventions and staff who teach individuals identified as dyslexic. They would learn how to judge the effectiveness of different types of interventions and diagnostic tools used in their schools and by using this data they will be able to improve the provision for children across the schools in which they work. This approach has the potential to provide a step-change in the type of support provided to children who have dyslexia.

Rose, J. (2009). Identifying and teaching children and young people with dyslexia and literacy difficulties.

<http://publications.dcsf.gov.uk/eOrderingDownload/00659-2009DOM-EN.pdf>

(Accessed: 15 August 2012).

Dr Mark Turner - Registered Educational Psychologist (Real Group (UK) Ltd)

European Dyslexia Association 2013

Title: Specific reading problems in a multilingual educational setting

Authors : Sonja Ugen, Hubert Marx, Romain Martin

Abstract

The diagnosis of specific reading problems is complex, especially in a multilingual educational system. Naturally, reading tests are presented in a specific language, which complicates the interpretation of possible reading problems. Indeed, it is difficult to determine whether problems are due to the test language or a specific reading deficit. Therefore, the current study aimed at adapting the dynamic Copenhagen International Dyslexia Test initially developed for adults to a school age population. This is a reading test independent of a specific language which focuses on the acquisition of the alphabetic principle, i.e. linking phonemes to symbols. In this symbol reading test, children first learn 3 symbols and corresponding phonemes, train to read monosyllables and are finally evaluated on reading 22 nonwords. Participants were 311 children at the end of grade 2 (mean age of 8;3 years) enrolled in Luxembourgish schools where literacy skills are acquired in German. Representing the overall population, the sample included children speaking different languages at home: Luxembourgish, French, Romance (Portuguese, Italian, Spanish) or bilingual. The children passed the symbol reading test as well as two standardized German word and pseudoword reading tests. In terms of accuracy and latency, the children of the different language groups performed similarly on the standardized pseudoword and symbol reading task. However, for correct German word reading, the Luxembourgish speaking children outperformed the Romance group. For reading fluency, there were group differences on the German standardized tests only, with the Romance group performing poorest. Conclusively, we only found performance differences between the different language groups on language specific tests, but not on the language independent symbol reading test. We will discuss the benefits of using the latter as part of a complete reading evaluation in a multilingual setting.

Type of in Japanese speaking children with Developmental dyslexia. ; phonological awareness disability and/or visual cognitive disability

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Disability of phonological awareness is one of the main cognitive disabilities of developmental dyslexia in English speaking countries. In Japanese speaking children with developmental dyslexia, most of them have problems both of phonological awareness and visual cognitive disabilities. However, we found four children who showed reading and spelling difficulty with visual cognitive disability and without phonological disability. Conversely, three children showed only phonological awareness disability.

They are conducted the following tests. Those are Wechsler Intelligence Test for Children as general intelligence test, Standardized Comprehension Test of Abstract Words, and Picture Vocabulary Test revised as receptive vocabulary tests, non-word repetition and word repetition in reverse order as phonological awareness tests and line drawings identification test, Rey-Osterreith Complex Figure Test (ROCFT) as visual cognition tests.

Children with developmental dyslexia manifested lower scores to compare with Chronological (CA) and Reading Age (RA) matched children as well as lower scores in the accuracy and fluency of Hiragana, Katakana, and Kanji reading and spelling tasks, in contrast to normal general intelligence, size of vocabulary.

Four children with dyslexia with visual cognitive disability without phonological disability, showed severer visual cognitive disability compared to children with dyslexia who showed both of visual cognitive and phonological awareness disabilities, and only phonological disability. Three children with only phonological deficits showed severer phonological awareness disability compared to other children with developmental dyslexia.

These results from two types of children suggested that severer visual cognitive disability alone and phonological deficit alone could cause reading and spelling disability in Japanese writing system.

Wissenschaftlicher Beitrag EDA 2013

Autoren: Josefine Vollmar, Wolfgang Scharke, Jennifer Cröll & Thomas Günther

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Titel:

Paarassoziationslernen im Vorschulalter als Prädiktor späterer Leseleistungen?

Einer Ursachentheorie für Legasthenie entsprechend, zeigen Erwachsene sowie Schulkinder mit einer Legasthenie Defizite im Assoziationslernen von visuell-verbalen Reizen (Blomert & Willems, 2010). Ungeklärt ist, ob sich die Fähigkeit des Paarassoziationslernens bei Kindern mit späterer Legasthenie bereits vor Schuleintritt von denen guter Leser unterscheidet. Das Ziel der Studie ist es daher, den Zusammenhang zwischen visuell-verbalem Assoziationslernen im Vorschulalter und späteren Leseleistungen zu untersuchen.

Es wurden zwei PC-gestützte Paarassoziationslernaufgaben (PAL-Aufgaben) entwickelt, die den Leseerwerb schematisch nachstellen sollen. Die rezeptive Fähigkeit des PAL wurde durch die Zuordnung eines verbalen Stimulus zu einem visuellen Reiz überprüft. Zur Untersuchung der produktiven PAL-Fähigkeit wurde eine Morsecodeaufgabe benutzt. Innerhalb einer Längsschnittstudie wurden Kinder im letzten Kindergartenhalbjahr (N=280) mit den PAL-Aufgaben untersucht. Zusätzlich wurden die Prädiktoren Frühes Schriftwissen, Phonologische Bewusstheit und Schnelles Benennen mit einem standardisierten Vergleichsinstrument (BISC, Bielefelder Screening zur Früherkennung von Lese-Rechtschreibschwierigkeiten) erfasst. Die Leseleistungen wurden am Ende der ersten und am Ende der zweiten Klasse erhoben.

Die Ergebnisse zeigen, dass Kinder mit einer schlechten Performanz in den PAL-Aufgaben im Vorschulalter am Ende des ersten Schuljahres schlechtere Leseleistungen aufweisen als Kinder mit guter Performanz. Auffällige Leser sind zudem signifikant häufiger nicht in der Lage die visuell-verbalen Assoziationen zu lernen als unauffällige Leser. Die PAL-Aufgaben tragen einen signifikanten Beitrag zur Varianzaufklärung der Leseleistungen bei.

Demnach kann das Paarassoziationslernen bereits im Vorschulalter dazu beitragen, spätere Leseleistungen vorherzusagen. Diese Ergebnisse haben sowohl auf die Inhalte der Früherkennung sowie auf die der Frühförderung von Legasthenie Einfluss.

Åsa Wengelin
Department of Swedish
University of Gothenburg

Linguistic characteristics and text quality in texts produced by 15-year-olds with and without reading and writing difficulties

Students with reading and writing difficulties commonly rate writing as one of their greatest and most persistent problem areas. Compared to reading difficulties, however, our knowledge about writing difficulties is limited. What we do know is that despite the case that dyslexia is assumed to be a word-level problem, the texts of these writers frequently receive lower quality ratings than those of their peers without reading and writing difficulties. In order to understand how to prevent writing difficulties, teach children with writing difficulties, develop compensatory tools for writing difficulties, and develop effective interventions for adults with writing difficulties we need to improve our understanding about the nature of writing difficulties. In this paper we investigate the writing of 15-year-olds and university students with reading and writing difficulties, and compare them to writers without known difficulties. For both groups we report linguistic characteristics of the texts, error analysis, process data and holistic measures of text quality. The results show that the writers with reading and writing difficulties wrote shorter texts with lower text quality, lower vocabulary diversity and more spelling errors. As could be expected the university students wrote longer and better texts than the 15-year-olds. Moreover, the writers with reading and writing difficulties made more pauses than the writers without reading and writing difficulties. All the variables that distinguished the groups with and without difficulties correlated significantly with a holistic measure of text quality. More detailed analyses of the participants' writing processes are currently being performed.

LEGASCREEN – Ein multimodaler Test zur Früherkennung der Legasthenie

Ziel des Projektes ist die Entwicklung eines auf EEG und Genetik basierenden Screeningtests zur Früherkennung der Legasthenie.

Gegenwärtig gibt es zwar effektive, jedoch auch kostenintensive Therapien in späteren Stadien der Legasthenie. Es fehlt aber die Möglichkeit, Kinder mit einer Veranlagung für diese Störung in frühen Stadien der Sprachentwicklung zu identifizieren, wenn eine spezifische Förderung am aussichtsreichsten ist. Im Falle einer geeigneten Frühtherapie könnte das Gehirn des Kindes sein Selbstheilungspotential voll entfalten, was zu deutlich reduzierten Problemen während der Schulzeit führen würde.

Im Projekt LEGASCREEN sollen zwei Ansätze kombiniert werden, um eine frühe und verlässliche Diagnose sicherzustellen: Genetik und EEG.

Legasthenie hat einen starken erblichen Hintergrund. 50-70% der Störung können auf genetische Faktoren zurückgeführt werden. Basierend auf bereits bekannten Kandidatengenen wird in unserem Projekt eine moderne Forschungsmethode namens Gezielte Resequenzierung zum Einsatz kommen, um die bestmöglichen Marker in den untersuchten genetischen Regionen zu finden.

Weiterhin sind charakteristisch veränderte EEG-Signaturen für Legasthenie bekannt. Diese Signaturen können mittels eines EEG-Paradigmas namens Mismatch Negativity (MMN) festgestellt werden.

Eine dritte Komponente des Projektes werden MRT-Untersuchungen sein, die EEG und Genetik in Verbindung setzen, jedoch nicht Teil des angestrebten Tests sind. Mittels MRT sollen Unterschiede in der weißen Substanz des Gehirns zwischen Legasthenikern und Kontrollprobanden untersucht werden.

Die Ergebnisse des LEGASCREEN-Projektes sollen zu einem tieferen Verständnis von Legasthenie und ihrer neuronalen und genetischen Ursachen beitragen. Dieses Wissen soll anschließend genutzt werden, um eine Frühdiagnostik bereits ab drei Jahren zu ermöglichen.

LEGASCREEN – A multimodal test for early diagnostic of dyslexia

The project's final aim is the development of an early screening test for dyslexia, based on genetics and EEG.

To date, effective, but cost-intensive therapies/trainings still exist at later stages of dyslexia. However, the possibility to identify affected children at an early stage of speech development, when specialised training is most promising, is still lacking. In the case of an appropriate therapy at an early stage, the child's brain could unfold its self-healing potential, leading to diminished problems at school or to no problems at all.

Within the LEGASCREEN projects, two approaches should be combined to enable an early and reliable diagnosis: genetics and EEG.

Dyslexia has a strong genetic background. 50-70% of this disorder can be explained by genetics. Based on candidate genes already known, we will use a modern research method named targeted re-sequencing to find the best possible markers in those regions.

Furthermore, it is known that dyslexics show characteristically changed EEG-signatures.

These signatures can be found using an EEG paradigm named mismatch negativity (MMN).

A third component of the project, connecting EEG and genetics but not being part of the final test, will be MRI measurements to study white matter differences between dyslexics and normal reading children.

Results of the LEGASCREEN project will be a deepened understanding of dyslexia and its neural and genetic background. This knowledge will be used to form a test for early diagnosis of dyslexia, starting with the age of three.

Ulrika Wolff, Ingela Andreasson och Malena Åvall

Göteborgs universitet, Institutionen för pedagogik och specialpedagogik

Betydelsen av lärares kunskaper om språkets uppbyggnad för upprättandet av åtgärdsprogram för elever med läs- och skrivsvårigheter

I Sverige anses ett ökande antal barn ha någon form av svårigheter i skolan. En majoritet av dem har läsproblem. Enligt lagstiftningen ska en elev ges specialundervisning om det finns en risk att de pedagogiska målen inte kommer att uppnås, och då ska åtgärdsprogram upprättas för planering, uppföljning och utvärdering av detta stöd. Planen bör utformas i samråd med eleverna och deras föräldrar. Ett flertal populationsstudier pekar mot att lärares utbildning har stor betydelse, och till och med kan anses ha avgörande betydelse för barns läskompetens (ex. Darling-Hammond, 2000). Syftet med den aktuella studien är att belysa relationen mellan kvaliteten på åtgärdsprogram för elever med läs- och skrivsvårigheter och lärares faktiska kunskaper om språkets uppbyggnad. Den ena delen av det empiriska materialet består av 150 åtgärdsprogram författade av 61 lärare i 11 kommuner i Sverige. Åtgärdsprogrammen har bedömts och kategoriserats efter kvalitet och relevans. Den andra delen består av resultat på kunskapsfrågor om svenska språkets uppbyggnad, som de medverkande lärarna har besvarat. Preliminära analyser visar en signifikant skillnad vad det gäller kunskaper om språkets uppbyggnad mellan gruppen av lärare, vars åtgärdsprogram har kategoriserats som relevanta och av god kvalitet respektive den gruppen av lärare, vars åtgärdsprogram har kategoriserats som mindre relevanta. Resultaten kommer att diskuteras utifrån kvalitetsbedömning av åtgärdsprogram och de ingående kunskapsfrågorna.

Ulrika Wolff and Jan-Eric Gustafsson

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The study is based on theoretical notions and empirical results from two areas: 1) research showing that phonological awareness (PA) provides a necessary foundation for early reading skills; and 2) research on the structure of cognitive abilities. We investigate the mechanisms through which cognitive abilities influence development of PA. PA comprises a set of subskills, which develop over time. Little is known about the structure of these subskills, but we propose a model based on two dimensions of phonology. One is the linguistic complexity level (LCL): morphemes, syllables/rhyme, and phonemes. The other is the phonological complexity level (PCL): identification (ID), blending/segmentation (B/S), and manipulation (MAN). The phonological tasks were constructed through a crossing of these two dimensions. A sample of 222 children participated with three waves of testing at the age of four and five. At the first wave a broad range of tests measuring different aspects of fluid intelligence (Gf) was included. Based on Cattell's Investment theory, we developed a set of specific hypotheses about the mechanisms through which Gf influences PA, and how phonological subskills influence one another over time. A multimethod-multitrait approach, yielded the three PCL factors ID, B/S and MAN with a phoneme factor. An autoregressive model was fitted to the three waves of data. Gf had a very high relationship to ID1, and the autoregressive effects were very strong. Interrelations implied successive propagation of influence from Gf and ID on the other subskills. We thus conclude that this characterizes the development of early phonological skills.

Ulrika Wolff

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Tidig fonologisk träning

Många studier har visat att träning av fonologisk medvetenhet har en positiv effekt på den tidiga läsinlärnningen (t.ex. Bradley & Bryant, 1985; Lundberg et al., 1988; Melby-Lervåg et al., 2012). De flesta av dessa studier har dock avsett barn som är fem eller sex år, och det är angeläget att veta om dessa effekter kan uppnås med barn i fyraårsåldern, då man vanligtvis påbörjar den spontana utvecklingen av fonologisk medvetenhet. Det är också så att de flesta studier har genomförts strax innan, eller samtidigt som den formella lästräningen. Syftet med föreliggande studie är att undersöka effekten av tidig fonologisk träning på barnens senare fonologiska färdigheter och den tidiga läsningen. Ett svenskt fonologiskt träningsprogram har utarbetats och implementerats i en randomiserad preventionsstudie för barn som är fyra år. Interventionsgruppen ($n = 138$) erhöll 20 minuters träning varje dag under sex veckor. Kontrollgruppen ($n = 84$) deltog i motsvarande träning men utan den kritiska fonologiska komponenten. Här redovisas resultat från när barnen var fyra, fem och sex år samt preliminära resultat från en subgrupp i årskurs 1. Efter den första omgången av fonologisk träning var det en mycket signifikant effekt av den fonologiska träningen med en effektstorlek om $d = 0,60$. Ett år senare var effekten något lägre ($d = 0,39$) men fortfarande högt signifikant. Barnen med den lägsta initiala fonologiska förmågan hade störst nytta av träningen både när det gäller fonologisk förmåga och tidig läsutveckling.

The role of non-symbolic and symbolic processing on children's arithmetic achievement

The role of the Approximate Number System (ANS) on human's arithmetic skills has long been debatable. While a number of studies have showed that people's number acuity, or the smallest ratio between two quantities that can be distinguished at glance, is predictive of their arithmetic performance (e.g. Halberda, Mazocco, & Feigenson, 2008; Piazza et al., 2010), many other studies reported insignificant relationship between the two (e.g. Luculano, Tang, Hall, & Butterworth, 2008; Holloway & Ansari, 2008). The current study aimed at investigating the role of both non-symbolic and symbolic processing in children's arithmetic development. Two-hundred and one Chinese kindergarten children, with a mean age of 6 years and 1 month, were assessed on their symbolic skills (counting and estimation), non-symbolic skills (number acuity), and arithmetic skills. The data were analyzed using structural equation modeling. The final model, which has a good fit of the data ($\chi^2=20.634$, CFI=.994, RMSEA=.021), suggested that non-symbolic processing predicted concurrent arithmetic performance indirectly through symbolic processing. The present findings support the role of ANS on human's arithmetic skills and provide a potential reason for the insignificant results found in previous studies. Both symbolic processing and non-symbolic processing play an important role in children's development of arithmetic skills.

FLUENCY

Related to Prosody → MUCH More than Speed

Submitted by Nancy Cushen White, Ed.D.

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Professional—Clinical View

Prosody is appropriate expression combined with meaningful phrasing (Cowie, Douglas-Cowie, & Wichmann, 2002; Miller & Schwanenflugel, 2006, 2008; Schwanenflugel, Hamilton, Kuhn, Wisenbaker, & Stahl, 2004). There is growing consensus that accuracy, automaticity, and prosody all make important contributions to fluency (e.g., Hudson, Pullen, Lane, & Torgesen, 2009; Rasinski, Reutzel, Chard, & Linan-Thompson); all three together influence comprehension. Oral reading fluency is demonstrated through ease of word recognition, *appropriate* pacing, chunking of words into meaningful phrases, and intonation.

Slower reading is sometimes necessary to support meaning. Many fluency researchers (e.g., Rasinski et al., 2006; Samuels & Farstrup, 2006) agree that accurate and automatic word identification is essential for fluent reading and that phonemic awareness and letter naming are important factors in developing accuracy and automaticity (e.g., Chall, 1996; Ehri, 1995). What needs to be challenged is the over-emphasis placed on accuracy and automaticity—perhaps because they are easily quantifiable (Paris, 2008; Torgesen & Hudson, 2006)—often at the expense of other aspects of fluent reading (Kuhn & Stahl, 2003). Excessive rate can impede comprehension by shifting focus away from understanding or by interfering with the construction of meaning. While it is true that exceedingly slow word recognition hinders comprehension and that skilled readers' word recognition is automatic, it is also true that skilled readers vary their pace depending upon text difficulty and the complexity of ideas encountered in the text. To become a skilled reader, it is important to learn to be flexible, not simply fast (Kuhn, Schwanenflugel & Meisinger, 2010).

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Towards the Construction of an Assessment Tool for Arabic Reading Abilities within Lebanese Beginning Readers

Sophie Dandache¹, Jan Wouters², & Pol Ghesquière³

Learning to read depends on the acquisition of different types of knowledge and skills. Empirical research has provided abundant evidence indicating that reading difficulties have their origin in poorly specified phonological representations. This core phonological deficit is manifest in three broad areas. The first one, phonological awareness (PA), is defined as the ‘conceptual understanding and explicit awareness that spoken words consist of individual speech sounds (phonemes) and combinations of speech sounds (syllables, onset-rime units)’. The second component, verbal short-term memory (VSTM), consist in the ability to store verbal material efficiently in working memory. Finally, the third area concerns the retrieval of phonological codes from long-term memory (rapid automatized naming or RAN). Tools assessing these three areas are commonly used in most alphabetic languages like English or French to assess reading abilities. Our study aims then at evaluating whether tools assessing the same abilities can be used as indicators of reading abilities in a consonantal language as Arabic. The tasks were administered to Arabic beginner readers (1st grade, 6 years of age) selected within Lebanese⁴ school. Preliminary results showing a strong link between measures of PA, RAN , VSTM and reading will be discussed during the talk. We will also discuss the role of memory in reading standard Arabic, which appears to be more important than what has been observed in other languages.

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Gesamteuropäischer Legastheniekongress

20.-22. September 2013

in Växjö, Schweden

Atempädagogik und Legasthenie

Verbesserte Leistungsfähigkeit durch Optimierung der körperlichen Voraussetzungen

Didaktischer Beitrag von Dipl.-Päd. Ursula Dorn, Wien

Seit Beginn meiner Arbeit als Volksschullehrerin habe ich autodidaktisch Meditation, Körperarbeit, Berührungen als Hilfe im Unterricht eingesetzt. Dabei entdeckte ich, dass Kinder ihr Unbehagen oft über erhöhten Hautwiderstand oder in ihrer Körperspannung zeigen. Mit der Ausbildung zur Akademischen Atempädagogin habe ich das fundierte methodische Rüstzeug dafür erworben, auf diese Zeichen hilfreich zu reagieren.

Die Atempädagogik nach Middendorf ist körperzentriert und basiert auf mehreren Säulen:

1) Atem

So wie wir atmen, so leben wir! Jedes menschliche Befinden – ob Freude, ob Wut – wird unabhängig von Land und Kultur durch den Atem in gleicher Weise sichtbar. Unsere Stimme ist hörbarer Ausatem.

2) Üben in Sammlung und Achtsamkeit

Ich bin ganz bei mir, oft mit geschlossenen Augen, nehme achtsam den Atem und seine Bewegungen im Körper wahr.

3) Einheit von Körper, Geist und Seele

Der Körper besteht aus drei Atemräumen. Jeder Atemraum entspricht bestimmten Ressourcen.

a) Unterer Atemraum

Die Füße sind die Wurzeln des Menschen. Ohne guten Bodenkontakt ist keine gute Haltung des Körpers möglich.

b) Mittlerer Atemraum

Aus einer starken Mitte, bezieht das Kind u.a. Selbstvertrauen, Selbstwert – gefühl, Frustrationstoleranz,

c) Oberer Atemraum

Hier sind u.a. Interesse, Konzentrationsfähigkeit wichtige Ressourcen.

Je besser die drei Atemräume gestärkt und miteinander verbunden sind, umso besser sind die körperlichen Lernvoraussetzungen. Durchlässige Gelenke erhöhen den Energiefluss zusätzlich.

Wir stärken zuerst vorhandene Ressourcen, dann beginnen wir, unterentwickelte Potenziale zu kräftigen.

Mein Ziel ist, mit vielfältigen Atemübungen die Persönlichkeit zu stärken, Blockaden zu lösen und das Lernen in körperlicher Balance zu fördern.

Die Atempädagogik stellt nach meinen bisherigen Erfahrungen eine Bereicherung für die Arbeit mit Legasthenikern dar.

Investigating the Double-Deficit Hypothesis Across Transparent and Opaque Orthographies

Although the phonological deficit (PDH) hypothesis has been able to account for the large proportion of reading impairments research has identified subgroups of individuals with reading difficulties but adequate phonological skills. A rival to the dominant PDH, the double-deficit hypothesis (DDH), is suggested to account for these individuals, which see deficits in rapid automatized naming (RAN) as a second, independent core cause of reading difficulties. According to the DDH three subtypes of individuals with reading difficulties can be identified, the single *RAN-deficit* subtype, the single *phonological-deficit* subtype, and the *double-deficit* subtype (defined by a deficit in both PA and RAN). The DDH predicts that the double-deficit subtype represents the most impaired readers, followed by individuals in either one of the single-deficit groups.

The findings from studies that have investigated the DDH in reading development are, however, somewhat mixed. Whereas some studies support the predictions made by the DDH other studies report that the double-deficit group does not systematically perform worse than the single- or even the no-deficit groups on different reading tasks. To date, there exist few studies that have tested the DDH longitudinally, and no study that have investigated the DDH with a cross-linguistic design.

I will report from a longitudinal study investigating the DDH directly across transparent and opaque orthographies (Norway/Sweden vs. US/Australia). The study comprised 596 children from Norway and Sweden and 1510 children from U.S. and Australia, followed for four years between preschool and Grade 2.

Abstract: Carsten Gondorf –TU Kaiserslautern, Germany

Dyslexie und räumliches Denken

Positiv beschrieben handelt es sich bei Dyslexie um einen nachweisbaren *Unterschied* in der Verarbeitung auditiver und/oder visueller Informationen bzw. im Zusammenspiel zwischen genetischen, neurobiologischen und kognitiven Faktoren, die Schwierigkeiten beim Lesen und Schreiben hervorrufen können.

Die in der Forschungsliteratur anzufindende, stärkere Gewichtung und begriffliche Fixierung auf die Beschreibung der vorliegenden Dysfunktionen trägt allerdings dazu bei, dass der Untersuchung der Schwächen mehr Raum eingeräumt wird, als evtl. daraus resultierenden Stärken; hauptsächlich Bezug nehmend auf die bei Dyslektikern – teils kontrovers diskutierten – ausgeprägten Fähigkeiten im visuell-räumlichen Denken, Kreativität und holistischen Denken (z.B. West, 1997; Wolff & Lundberg, 2002). Insgesamt fehlt es an Untersuchungen, die nicht nur auf die weitere Erforschung des klinischen Störungsbildes aus sind, sondern die Erkenntnisse dieser Forschung aufnehmen und versuchen, die aus dem Informationsverarbeitungsunterschied resultierenden, angenommenen Stärken zu untersuchen.

Der vorliegende Beitrag berichtet aus einer laufenden Studie zur Erfassung des räumlichen schlussfolgernden Denkens bei Dyslektikern. Allgemein geht es in der Studie darum, die Präferenzen und Strategien von Dyslektikern bei der Lösung räumlich-relationaler Aufgaben zu untersuchen und den Problemlöseprozess nachzuvollziehen. Als zentrale Einflussgröße auf den Lösungsvorgang wird dabei der Grad bzw. die Möglichkeit der Interaktion mit dem Stimulusmaterial angesehen. Die Annahme ist hierbei, dass die Interaktion des Problemlösenden mit seiner Umgebung, das evtl. Manipulieren bzw. Nutzbarmachen physischer Objekte, den Handlungs- und Denkprozess, der zur Lösung des Problems führt, unterstützt. Weiterhin wird hinterfragt, ob die Erweiterung des Problemlöseraums auf die naheliegende Umgebung kognitive, eingeschränkte Ressourcen wie z.B. den Arbeitsgedächtnisspeicher entlasten und mehr Raum für ein sprichwörtliches out-of-the-box-Denken lassen (Villejoubert & Vallée-Tourangeau, 2011).

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Educational Implementation of Assistive Technology – Political and Individual Challenges and Possibilities

The use of assistive technology (AT) combined with everyday technology and access to digital material increasingly provides opportunities for dyslexics to succeed throughout elementary, secondary, and further education. However, an optimal long-term integration of technology among this group depends on the political framework, the knowledge and resources at the individual educational institution, as well as the quality of support for the individual student.

Based on experience within special needs consultancy and reading/writing counselling in Denmark, this workshop addresses the challenges involved in ensuring and maintaining accessibility and inclusion throughout the educational system and the role that technology plays in this respect. Furthermore, it addresses the challenges involved in ensuring and optimising the individual dyslexic's use of technology.

The workshop focuses specifically on:

- Danish practice and experiences concerning individual political grants for AT solutions throughout the educational system.
- Practice and experiences in relation to employing AT in everyday teaching as well as for tests and exams.
- The potential that reading and writing technology along with access to digital material offers as a general learning tool and the importance that this has for inclusion.
- The continuing need for qualified individual support, including reading/writing counselling, to ensure individual long-term AT strategies and AT success.

4th all-European Dyslexia conference (in Växjö)

Abstract for a poster presentation

Specific numerical impairment in developmental dyscalculia: number sense deficit and/or deficit of access to numerical representations?

Dyscalculia is a mathematics disorder that interferes with education activities and daily-life activities. The definition of this disorder remains vague. Moreover, the difficulties encountered by children (e.g., difficulties in counting, enumerating, calculating, solving problems) relate more on assessment tasks than on impaired processes. Different cognitive hypotheses have been proposed to explain the functional origin of the syndrome. Among them, the "*number sense* deficit hypothesis" was posed to account for the specific numerical deficit in dyscalculic children. According to this hypothesis, dyscalculia results from a deficit in the processing of non-symbolic number representations, and from altered mental numerical representations, leading to difficulty to compare, identify and estimate numbers, to difficulty placing numbers on a numerical mental line, etc. The "number sense deficit hypothesis" is however challenged by the hypothesis of a deficit of access to numerical representations, according to which dyscalculia rather originates from difficulty in accessing the meaning of numbers presented in a symbolic Arabic code. This hypothesis is support by studies which show that dyscalculic children have good performance to deal with non-symbolic numbers, but difficulties in processing numbers in Arabic numerals. In this literature review, we briefly present and criticize the studies underlying these two explanatory hypotheses.

Abstract Submission for EDA2013 – an academic paper

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Title:

The effects of visual attention span (VAS) and phonological awareness (PA) skills on reading in English-speaking children and adults: dyslexics versus normal readers

Abstract:

The contribution of visual attention span (VAS) and phonological awareness (PA) to reading skills in opportunity samples of English-speaking children and adults were examined using Valdois and her colleagues' psychophysical experiments.

The results showed that for children VAS plays a role in reading performance, in addition to PA. However, unlike the French data, our data did not show a clear dissociation between "at risk" children with a VAS deficit and those with a PA deficit. Our "at risk" children tend to have both VAS and PA deficits and this is the same for both younger (YR-2) and older (YR-4) children. The results also showed that for adults, in particular dyslexic adults, PA accounted for a greater variance in reading performance than VAS. Further, unlike the French dyslexic data, most dyslexic adults in English showed a double deficit (~40%).

The differences between French data and "our" data obtained from British children as well as adults might be due to the differences inherent in each orthography: e.g., the last letter in a word is critical in Reading in quasi-regular English (e.g., past vs paste; sit vs site).

Moreover reading in English may be phonologically more demanding than other languages including French.